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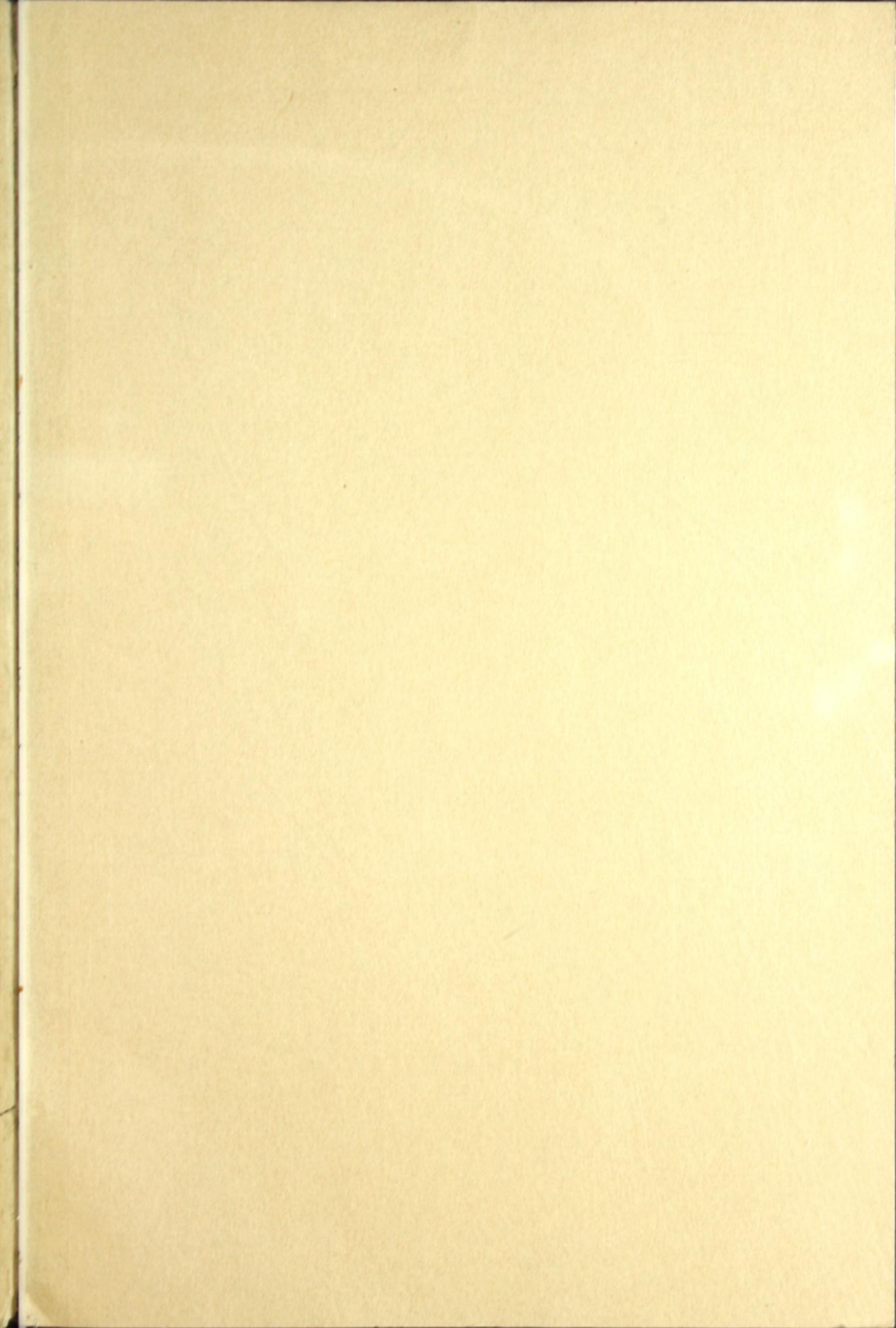
SUCCESSFUL STUCCO HOUSES

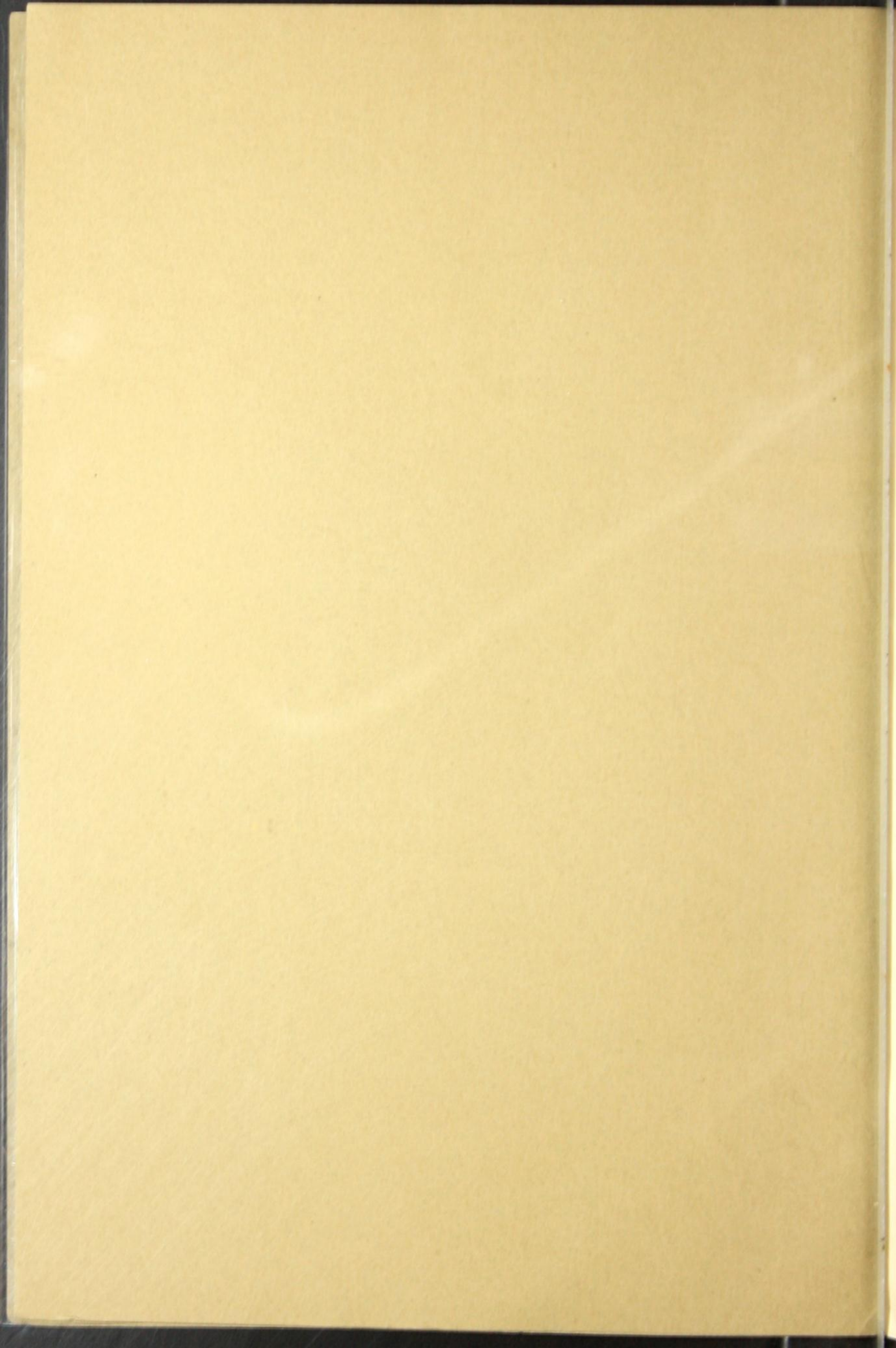
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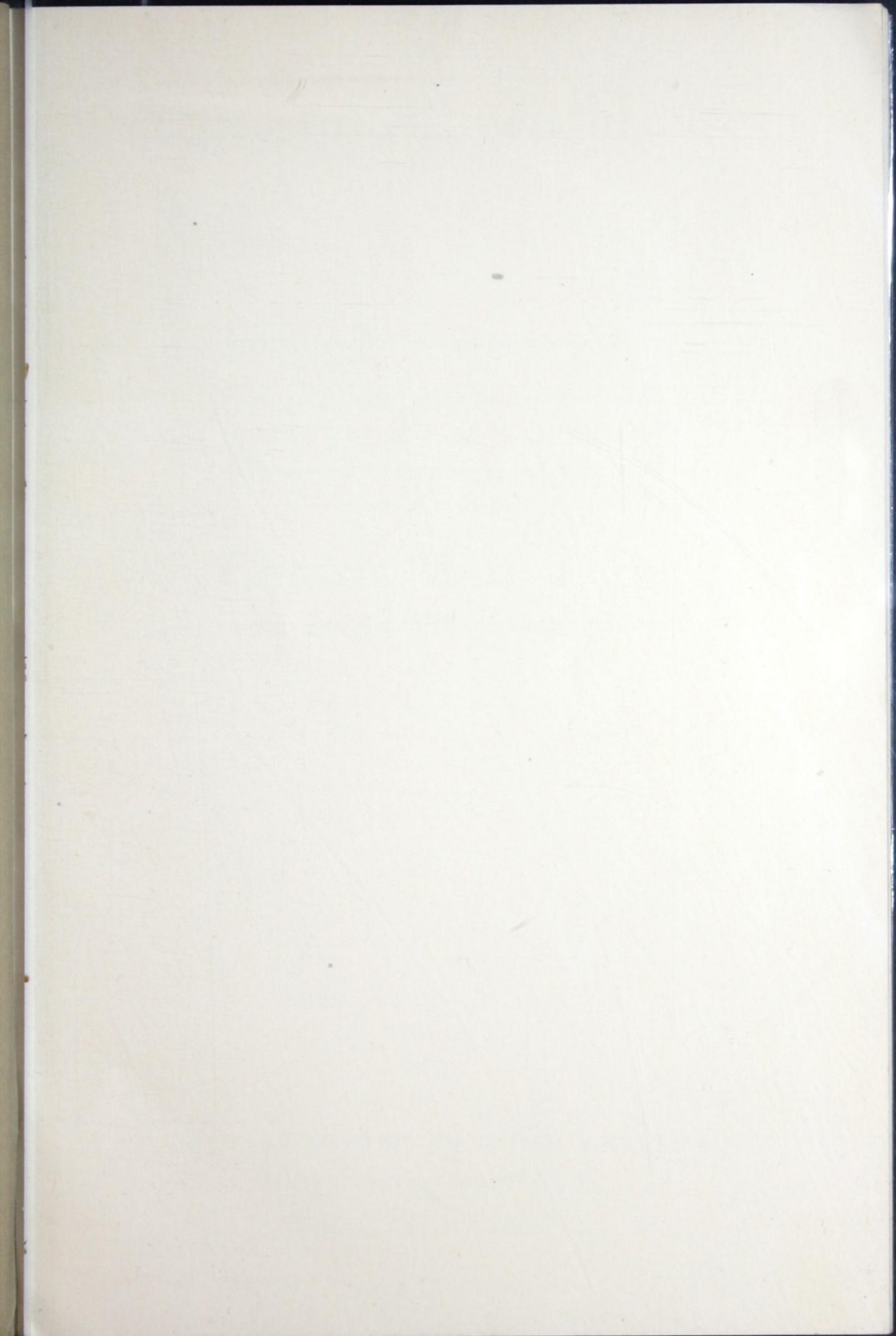


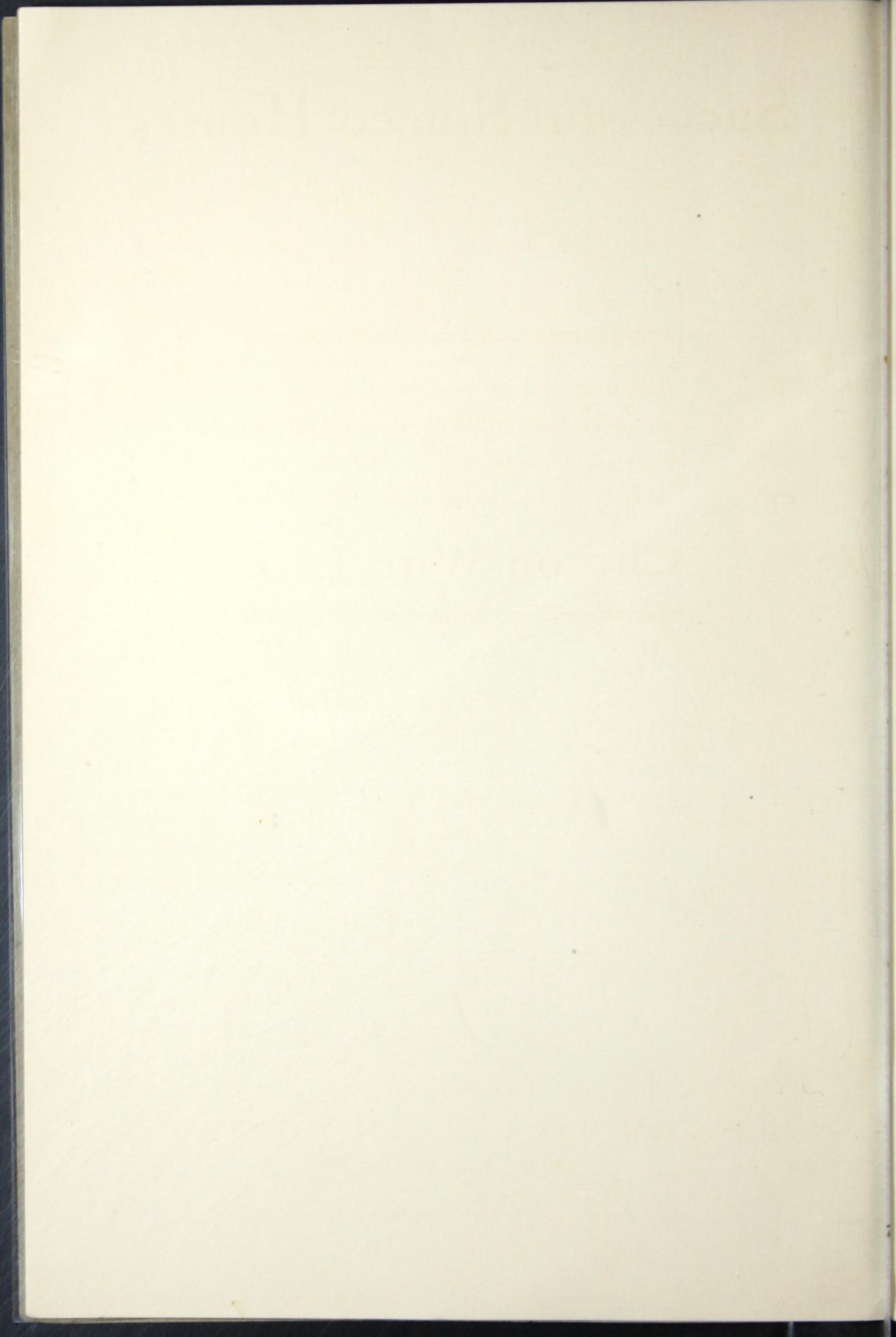
STUCCO HOUSES.
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Successful Stucco Houses

A booklet dealing with the construction,
economy and utility of Stucco Houses,
with special reference to the uses and
advantages of

Clinton Wire Lath

CLINTON WIRE CLOTH COMPANY

CLINTON, MASSACHUSETTS

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Introductory

THE increasing popularity of stucco houses, as in the case of most things which become popular and spring into sudden favor, has resulted in many cheap and carelessly constructed specimens which have been the means of creating false impressions, especially among persons who are not familiar with the technique of construction, in regard to the utility of stucco as a building material for residences. This clamor for cheap construction has done more to discredit stucco as a building material than any other one thing.

It is important that the use of stucco be governed by rigid specifications which have proved to give satisfactory results; while the materials entering into its construction, especially the lath, should be the best that the market affords. In this connection it may be said that Clinton Wire Lath, which has been manufactured for half a century, is a material which has been used with remarkable success in stucco work. Its reputation is being constantly substantiated by a continued use of the material on the part of leading architects who are building many of the country's most noteworthy and successful specimens of stucco construction.

Realizing how vital good materials and proper methods of construction are to the success of stucco, we have attempted, therefore, in offering "Successful Stucco Houses," to make it more than a mere picture book by presenting sketches, specifications and recommendations illustrating the best practice of the day in stucco-house construction.

The photographs herewith reproduced have been selected with the object of presenting a few examples of the many splendid stucco houses in the construction of which our Wire Lath has been used. These may truly be termed "successful" stucco houses, and it is hoped that they may serve to illustrate the wide range of adaptation of stucco to dwellings of all grades from the simplest cottage to the most elaborate and costly residence.

The Walls of a House

Selecting the Type

The average person contemplating the building of a home is confronted with many problems both of a financial and technical nature which require careful study and analysis in order to admit of intelligent solution. As a rule the prospective home builder has a definite idea as to what he cares to spend or can afford to spend for his house, and also fairly definite notions in regard to the number of rooms and general interior arrangement. But nine times out of ten he has given very little thought to the all-important question of the kind of walls his house should have.

In building a home, as in making any other kind of purchase, the average American wants that which will give him the most for his money. Of course there are people who can have anything they want and to whom the question of cost is of little or no consideration, but to the average person the building of a home is a serious proposition. The chances are that he will build but once in a lifetime and on that occasion is probably straining every effort to build within a certain limit of cost. He naturally wants that kind of a house which offers the most advantages and which will give him the greatest satisfaction for the money spent. He wants an artistic dwelling which will express beauty, refinement and hospitality; one which will possess strength and security; one which will be durable and lasting; and at the same time he must feel that for every dollar spent he is getting a dollar's worth of house. In the great majority of cases, therefore, the prospective home builder, after he has settled upon his maximum limit of cost, finds that the first important question which he begins to struggle with is, "What kind of a house shall I build?"

The interiors of residences are all built pretty much the same, that is to say, the structural features such as the floors, the partitions and the methods of construction are pretty much the same although, of course, arrangements, decorations, fixtures and interior trim vary greatly, depending upon the size and costliness of the structure. However, the plain, undecorated interior features in so far as con-

struction is concerned are practically the same in all kinds of residences.

When the prospective builder asks himself the question, "What kind of a house shall I build?" he is, therefore, unconsciously asking himself, "What kind of exterior walls shall I build?" and in making that decision he decides whether his house will be frame, stucco, brick or stone. In choosing between these various types of wall construction he attempts to select that type which will prove both architecturally and structurally satisfactory, but at the same time his decision must necessarily be influenced by the matter of expense.

In comparing the actual economy offered by various types of construction, there are always two elements to be considered; the first cost of construction and the future up-keep or maintenance. When it comes right down to true economy, the question of maintenance is usually of far more importance than that of first cost. First cost is a matter of a single expenditure to-day, whereas maintenance represents that never ending expense continually bobbing up at the most inopportune times and recurring in ever increasing amounts for years to come.

In the matter of first cost, the plain frame house is the cheapest, while that built of quarried stone is probably the most expensive. In the matter of maintenance, however, the frame is the most expensive, while the stone house is probably the cheapest. The ideal type, of course, would be the one which could be built at the cost of frame construction and at the same time require maintenance as low as that for stone construction.

The stucco house, which, as usually built, consists of a timber frame overcoated with cement, this cement being in reality artificial stone, offers therefore the nearest approach to this ideal type of construction. In this connection it must be appreciated that stucco is not a weak lime plaster which will disintegrate under the action of the weather, but is a cement plaster made of Portland cement, the same material of which bridges and large buildings are constructed and which resists the most severe climatic conditions and continues to grow harder and stronger the older it gets.

Stucco, therefore, utilizes the structural advantages of both

wood and cement without embodying the disadvantages of either. It combines the architectural impressiveness and durability of solid masonry with the economy and simplicity of frame construction. The stucco house is the happy medium between the house of solid stone and the one of frame ; it is the means of producing in effect the former at practically the cost of the latter.

Advantages of Stucco

In utilizing cement as a building material for residences, two principal types of construction have been developed ; namely, the concrete house and the stucco house. By the term "stucco" is understood the exterior finish of cement plaster which is applied as a covering to a framework of wood or steel or to walls of brick or terra cotta. In this way the stucco house may be distinguished from the true concrete house, although both may present similar exterior appearances.

The extensive use of stucco is apparent to the most casual observer. Even in the country it is not uncommon to-day to find the modern up-to-date farmer constructing an artistic and comfortable dwelling and also his barns, silo and other buildings of stucco. In the cities and suburban districts the extensive use of stucco is shown by the great number of residences which are to-day being built of this construction, while at the seashore and other outing places stucco is the prevailing material in the construction of up-to-date summer homes and cottages.

This increasing popularity of stucco is not without significance. It merely indicates a general appreciation of the splendid utility of this type of construction as an economical means of erecting artistic and permanent dwellings of all kinds.

The layman is very apt to be skeptical of stucco houses, especially if he has seen some which have cracked, spotted or have otherwise become disfigured, and may thus easily gain the impression that stucco is frail and unstable. While it must be admitted that the stucco house as sometimes built offers a very poor example of the builder's art, it cannot, however, be denied that good stucco construction in which the best materials are used and the

work executed in a proper and careful manner is both artistic and substantial, and affords an ideal method of building residences and small buildings of all kinds.

Both structurally and architecturally stucco possesses many advantages which render it an economical, artistic and dependable type of construction. It is not limited in its adaptation to any particular class of construction, but may be used with equal facility and economy either for the simple little bungalow or for the most elaborate and costly residence.

Because of the ease and facility with which it may be adapted to all grades of residences and small buildings, stucco affords the architect unlimited scope in developing almost any degree of architectural embellishment. Exterior columns, cornices, moldings and enrichments of any desired shape or arrangement may be readily formed in stucco with a degree of simplicity and economy possible with no other building material.

The comparatively thin exterior layer of cement plaster, light and easily molded, but at the same time strong and everlasting, gives the appearance of solid massive masonry and makes possible the execution of imposing architectural effects which could otherwise be obtained only at great expense.

Aside from its artistic possibilities and other architectural and structural advantages, stucco represents real economy. Being practically no more expensive to build than an ordinary frame clapboard house, the stucco house, if properly built, is a money saver in that it requires practically no maintenance. It does not fail perceptibly from year to year, but ages slowly and gracefully. Unlike the wooden building which requires painting and other periodic repairs to keep it presentable and sound, the stucco house is durable and, being permanently self-colored, does not grow shabby, but is mellowed with age.

Relative Costs

The use of stucco as a building material for residences has been hindered somewhat by false impressions as to the cost of this type of construction. The prospective owner naturally feels

that the artistic and sturdy-looking stucco house must necessarily be more expensive to build than the old familiar clapboard house which has long been considered the cheapest type of construction. While there is a slight difference in cost between the two types of construction, that difference, however, is so small that it may be said that good stucco construction is practically no more expensive than good frame construction.

The slight difference in first cost between the stucco house and the clapboard house dwindles into insignificance when the cost of maintenance alone is considered, to say nothing of the beauty and artistic appearance of the stucco house as compared with the one of wood.

By way of illustrating an actual comparison of the first cost of various types of construction, we quote the following from an article by Mr. J. Parker B. Fiske, entitled, "The Cost of a House," as published in the report of the Committee on Fire Prevention of the Boston Chamber of Commerce under date of September, 1911:

In order to prepare an accurate statement regarding the relative costs of different styles of construction, the writer has instituted a careful investigation, in which all variable quantities were eliminated and a *bona fide* bid obtained for the construction, in a given locality, of a series of houses, each one exactly like the others in every particular except the outer walls, which in the several houses were to be constructed of the several materials we wish to compare, *i.e.*, brick, wood, cement and hollow block.

Lest a single contractor might make an error, or for some reason be unduly favorable to one material as against another, we have secured simultaneous bids from several equally reliable contractors. While the several figures on the brick house vary considerably among themselves, as is inevitable with competitive bids, the relative figures on brick, wood, etc., are about the same in the case of one contractor as of another, and the average gives a fair and truthful conclusion.

In making this investigation, a little modern eight-room house of good design and excellent arrangement was chosen, the original having been actually built near Boston, Mass., under the direction of Thorn-dike & Kiessling, architects.

This house is typical in size, arrangement and cost of thousands of houses which are being erected throughout the East.

SUCCESSFUL STUCCO HOUSES

The architects were commissioned to prepare the plans and specifications necessary for obtaining bids for this house when built with the following types of exterior wall construction, all other details being common to all types:

Description of Various Types of Outer Wall Construction

Type 1. Frame covered with boards and finished with clapboards over building paper; inside surface furred, lathed and plastered.

Type 2. Frame covered with boards and finished with shingles over building paper; inside surface furred, lathed and plastered.

Type 3. A 10-inch brick wall, *i.e.*, two 4-inch walls tied together with metal ties and separated by a 2-inch air space inside surface, plastered directly on the brickwork. Face brick to cost \$17.50 per M., inside brick, \$9.00 per M.

Type 4. A 12-inch solid brick wall; inside surface furred, lathed and plastered. Face brick to cost \$17.50 per M., inside brick, \$9.00 per M.

Type 5. Eight-inch hollow terra-cotta blocks, stuccoed on the outside and plastered directly on the inside.

Type 6. Six-inch hollow terra-cotta blocks, finished with a 4-inch brick veneer on the outside and plastered directly on the inside. Face brick to cost \$17.50 per M.

Type 7. Frame covered with boards and building paper, furred and covered with stucco on Clinton Wire Cloth; inside surface furred, lathed and plastered.

Type 8. Frame covered with boards (building paper omitted), and finished with a 4-inch brick veneer on the outside; inside surface furred, lathed and plastered. Face brick to cost \$17.50 per M.

Type 9. Frame finished on the outside with a 4-inch brick veneer tied directly to the studding (boarding omitted); inside surface furred, lathed and plastered. Face brick to cost \$17.50 per M.

A separate drawing showing the details of each type of outer wall construction was prepared, and each was accompanied by a set of complete specifications for the entire house.

SUCCESSFUL STUCCO HOUSES

Everything about the house, except the outer wall construction, was identical in all nine types, and may be briefly covered by the following table:

Details Common to All Types

A. Foundations	Local Stone
B. Cellar Floor	Finished with 2-inch concrete of Portland cement
C. Chimney	Faced with brick costing \$17.50 per M.
D. Fireplaces	Faced with brick costing \$17.50 per M.
E. Plastering	First-class "two-coat" work
F. Exterior Finish	Cypress
G. Blinds	White pine
H. Screens	Copper bronze on white pine frames
I. Window Frames	Hard pine
J. Floors	Double floors throughout, with paper between, except in unfinished attic; Georgia pine upper floors; main hall on first floor of oak
K. Inside Finish	North Carolina pine
L. Doors	Washington cedar
M. Hardware	Bronze finish of ordinary type, costing \$60.00 for the job
O. Conductors	Copper
P. Flashing	Tin
Q. Electric Fixtures	Costing \$80.00
R. Hot Water Heating	Costing \$250.00 complete
S. Wiring	Costing \$68.00
T. Plumbing	Costing \$370.00
U. Painting	Exterior and interior, clapboard house, \$225.00; other houses, \$130.00
V. Glazing	Double thick German glass

NOTE. Shades, kitchen range and tile work not included.

The following local contractors of well-known reputation and experience were then selected:

W. F. Kearns Company	Boston
McDonald & Joslin Company	Boston
P. H. Jackson and Son Co.	Brockton
R. D. Donaldson	Lincoln
J. T. Wilson & Son	Nahant

Each was fully advised of the object of this investigation, and was asked if he were willing to undertake the preparation of figures which should truthfully set forth, to the best of his ability, the costs (including his profit) of houses to be built within ten miles of Boston, according to these several plans and specifications. Each was told that we desired to know the exact truth; if, as alleged by some contractors, the cost of a brick house is 25 to 30 per cent more than one of wood, then we wished to know it, as nothing could be gained by an investigation of this kind

S U C C E S S F U L S T U C C O H O U S E S

which was biased or influenced by any favoritism for one type over another.

Each contractor entered into the spirit of the investigation heartily, and agreed to figure out the cost fairly, to the best of his ability.

Each contractor was given the same information and instructions, and each took plenty of time to figure the entire house with care.

The following are the bids submitted by the five contractors in question, arranged without reference to the above order of names, each bidder standing ready to enter into a contract for the house in question at the figures submitted.

See table on page 14.

These figures, showing actual relative costs of common types of house construction, are not estimates, but are actual *bona fide* contractors' bids, made in good faith and substantiated by a guarantee to actually build at the figures named. It is, therefore, significant to find that of the nine different types of construction, Type No. 7, which was stucco on Clinton Wire Lath, shows a lower cost than any of the other types, with the exception of the clapboard type and the shingle type.

The tabulated bids show that stucco on Clinton Wire Lath averages but 2.9 per cent more in cost than the plain clapboard house, while its cost is but 1.3 per cent more than the shingle house. These figures simply mean that in building a house costing \$7,000, an artistic and durable dwelling may be constructed of stucco at an increase of only \$200 over the cost of a plain clapboard structure. When architectural beauty, durability, weather tightness, fire-proofness, low maintenance and every other advantage of stucco is considered, the stucco house has everything in its favor and is in reality more economical than even the plain clapboard house.

Comparative Bids

Type No.	1	2	3	4	5	6	7	8	9
DESCRIPTION	Clapboard	Shingle	10-inch Brick Wall Hollow	12-inch Brick Wall Solid	Stucco on Hollow Block	Brick Veneer on Hollow Block	Stucco on Frame	Brick Veneer on Boarding	Brick Veneer on Studding
Bid No. 1	\$6,732.00	\$-----	\$7,572.00	\$-----	\$7,416.00	\$7,777.00	\$6,857.00	\$7,130.00	\$7,080.00
Bid No. 2	6,235.76	6,370.40	6,736.43	7,105.00	6,491.23	6,762.83	6,410.00	6,746.20	6,664.88
Bid No. 3	6,692.00	6,786.00	7,118.00	7,418.00	7,179.00	7,238.00	6,847.50	6,970.00	6,895.00
Bid No. 4	6,690.00	-----	7,496.00	7,801.00	7,202.00	7,648.00	7,000.00	7,496.00	7,420.00
Bid No. 5	7,450.00	7,450.00	7,940.00	8,240.00	7,650.00	7,990.00	7,650.00	7,790.00	7,710.00
Average of bids	6,759.95	6,868.80	7,372.48	7,641.00	7,187.65	7,483.16	6,952.90	7,226.44	7,153.98

Comparative Bids

Percentage Excess Cost of Each Type Over Clapboards

Type No.	1	2	3	4	5	6	7	8	9
DESCRIPTION	Clapboard	Shingle	10-inch Brick Wall Hollow	12-inch Brick Wall Solid	Stucco on Hollow Block	Brick Veneer on Hollow Block	Stucco on Frame	Brick Veneer on Boarding	Brick Veneer on Studding
Bid No. 1	.0	-----	12.5	-----	10.2	15.5	1.9	5.9	5.2
Bid No. 2	.0	2.1	8.0	13.9	4.1	8.4	2.8	8.2	6.9
Bid No. 3	.0	1.4	6.4	10.8	7.3	8.2	2.3	4.2	3.0
Bid No. 4	.0	-----	12.0	16.6	7.7	14.3	4.6	12.0	10.9
Bid No. 5	.0	.0	6.6	10.6	2.7	7.2	2.7	4.6	3.5
Average of bids	.0	1.6	9.1	13.0	6.3	10.7	2.9	6.9	5.8

Construction of Stucco Houses

Stucco houses, in order to be durable, must be built with great care and must involve the use of the very best materials obtainable. The permanency of stucco construction is dependent, absolutely, upon the selection of proper materials and a strict adherence to certain essential principles of design and construction. Unless the supporting framework is rigid and well made, unless the materials entering into the construction are of the very best, unless these materials are prepared and applied with unusual care, stucco finish may be expected to crack, flake off, become spotted or deteriorate in one way or another in a comparatively short time. If, on the other hand, the construction is good, stucco may be depended upon as an economical, artistic and permanent form of construction, thoroughly adapted to all grades of residences and other small buildings.

The Lath

Stucco is merely exterior plaster, and as such is consequently subjected to severe climatic conditions of heat, cold and moisture, which tend to disintegrate it and dislodge it from its support. For this reason, it is essential that the grade and quality of the lathing material be such that it will provide a secure and efficient foundation to receive the plaster and to hold it in place. The lath must, therefore, be a material which will establish a perfect key for the plaster. It must be thoroughly imbedded in the body of the plaster, in order that the reinforcing action of the metal may be perfect, and it must be a material which will not rust away under the action of the elements.

In stucco construction the lath is the foundation which supports the entire exterior covering of stucco, and the difference in cost between good lath and poor lath is so small that there is no excuse for jeopardizing the permanency of the structure by selecting any lathing material other than the best that the market affords. The greatest care in plastering, troweling and finishing cannot be expected to eliminate defects which are bound to result from an

improper foundation, and for this reason the grade and quality of the lathing material is of vital importance to the success of stucco construction.

Lured by the fact that the lath is quickly covered up and hidden from view, it is always a great temptation to the unscrupulous builder to use a cheap, inferior material. It is, therefore, important that the grade and quality of the lathing material, more than any other one element, be zealously guarded by the most rigid and binding specifications, in order to assure the use of an efficient and reliable material.

In considering the necessary requisites of a lathing material to support exterior stucco, one of the most important and essential considerations is that of proper protection against rust and corrosion. No form of painted or so-called "dipped" lath should ever be used in connection with stucco. Being an exterior plaster, stucco is subjected to disintegrating agents, the nature of which is such as to require absolute protection of the lath against the formation of rust and corrosion. The most efficient and lasting protective covering for metal lath is galvanizing, which grade should always be specified for lath supporting exterior stucco.

Clinton Wire Lath, as described in the following pages, possesses the necessary structural features required for good stucco construction, and, as it has been used in this class of work for a great many years, has everything to commend it as the ideal lathing material for supporting exterior plaster. For stucco work, we especially recommend our No. 19 and No. 20 Galvanized-after-woven lath, both in the plain and in the V-stiffened grades.

Wall Construction

The exterior walls of stucco houses should consist of a supporting framework of rigid timber construction, covered on the outside with galvanized wire lath and stucco and on the inside with wire lath and plaster. The framework should consist of wooden studding, which may be used either with or without sheathing. It is important that the timber framing be well braced, with all joints properly arranged in such a way that the building may be as stiff and rigid as possible.

The studs, which are usually 2 x 4-inch or 2 x 6-inch timbers, should be spaced on 16-inch or 18-inch centers and should extend in one length from foundation to rafters without any intervening horizontal grain in the construction. Immediately below the second floor and attic joists, there should be set a 1 x 6-inch ledger board extending horizontally around the building, to serve as a brace for the studs and as a support to receive the floor joists. This brace or joist carrier should be set in flush with the inside faces of the studs and should be securely spiked to them. The floor joists should be notched over the ledger boards, the amount of notching being that necessary to bring the floor to a uniform surface. All joists should also be spiked to the studs.

For the type of construction in which sheathing is used, the sheathing boards should be of shiplap type, not less than 6 inches nor more than 8 inches wide, and should be dressed on one or both sides to a uniform thickness of $\frac{7}{8}$ inch. The sheathing should be preferably set diagonally across the studs, with all joints alternated or broken in such a way as to give a rigid and well-braced construction.

When sheathing is used, the exterior surface should be covered with the best grade of waterproof paper, which should be carefully lapped and sealed, in order to be thoroughly moistureproof. This waterproofing should be laid in horizontal layers, with the bottom strip well down behind the baseboard or water table at the bottom of the wall, and with each succeeding strip lapping the one below at least 2 inches. The paper should also lap flashings at all openings, and all tacking should be done within 2 inches of the top horizontal edge, where tacks may be covered by the lap of the strip above.

After the sheathing has been set and properly waterproofed, there should then be applied the very best grade of galvanized wire lath that it is possible to obtain. The lath should always be tightly stretched and securely stapled in place, in order to prevent bulging and subsequent cracking of the plaster. In this type of construction involving the use of sheathing, it is important that the lath be properly furred out beyond the waterproofed surface, in order that the plaster may obtain a proper key behind the lath

and also provide an air space behind the plaster. This may be accomplished by setting $\frac{3}{4}$ -inch furring strips at 12-inch intervals, if plain lath is used, or 18-inch intervals if the lath is provided with V-stiffeners.

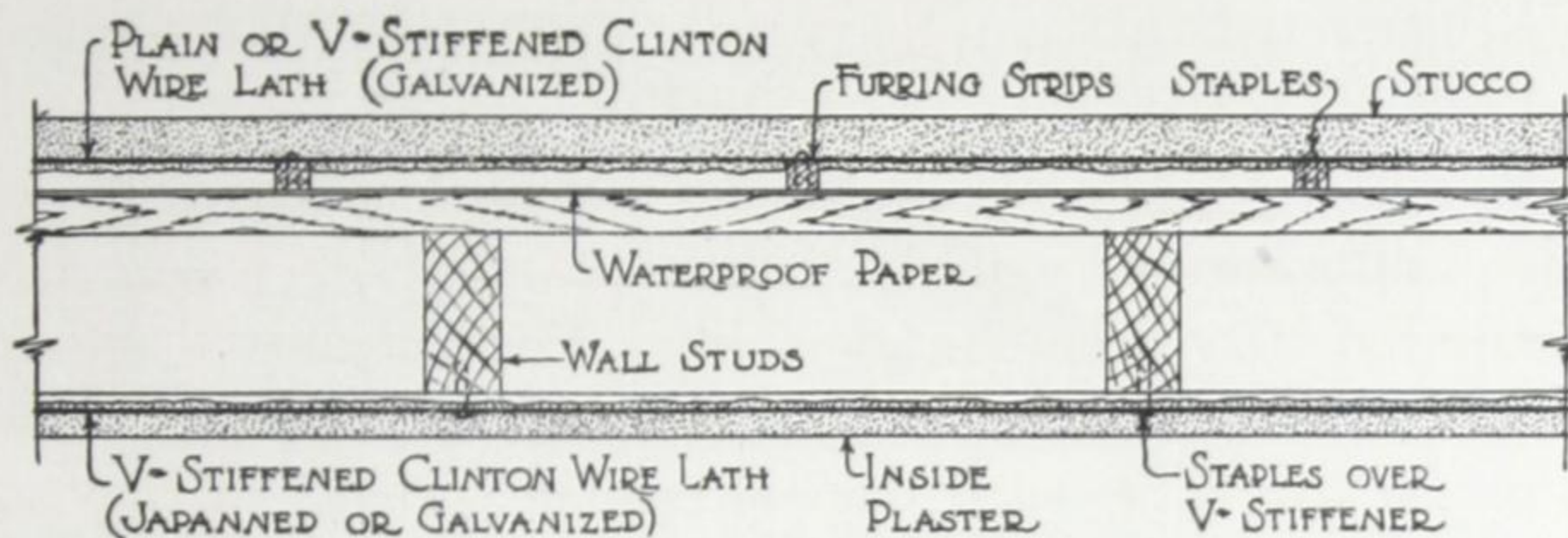
Furring strips, however, may be entirely eliminated by using Clinton Lath provided with V-stiffeners of the proper size, to give the required offset from the sheathing. The standard V-stiffener, which is $\frac{3}{8}$ inch deep, is hardly sufficient for this purpose, and for that reason lath to be used over sheathing without furring strips should be provided with special stiffeners having the required depth.

By using Clinton Wire Lath provided with $\frac{3}{4}$ -inch V-stiffeners, this material may be applied directly to the sheathing, thus eliminating all furring strips and giving ample clearance behind the face of the lath to establish a satisfactory key for the plaster and to maintain an air space between the plaster and the sheathing.

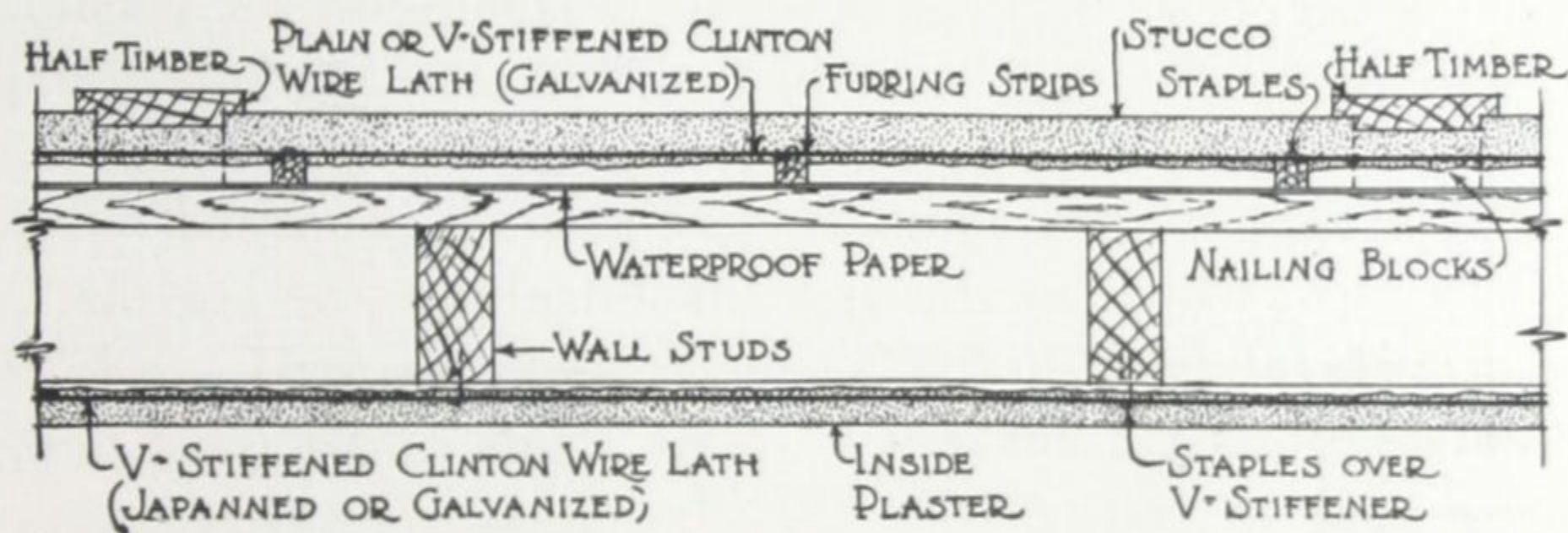
Another and very efficient type of wall construction is one in which the sheathing is omitted. This is accomplished by applying wire lath, which for this type should always be provided with V-stiffeners, directly to the outside faces of the studs, with the V-stiffeners running transversely to the studs and stapled to them. In this type of construction the scratch coat of mortar is applied as usual to the lath, but after it has become set the inside or the back face of this coat is then plastered over with $\frac{1}{2}$ to 1 inch of mortar, which is beveled or rounded in against the studs. In this way the wooden sheathing is replaced in reality by cement sheathing, which is locked against the studs by these beveled ridges of plaster, thereby stiffening and bracing the studding and serving every function of sheathing.

When wooden sheathing is omitted and the lath applied directly to the studs, or when lath is applied to furring strips on sheathing, it is never necessary to make use of special stiffeners, since the standard V-stiffeners, as attached to stock grades of Clinton V-Stiffened Lath, are of sufficient size to span the customary opening between studs or between furring strips and give ample stiffness and rigidity to the lath.

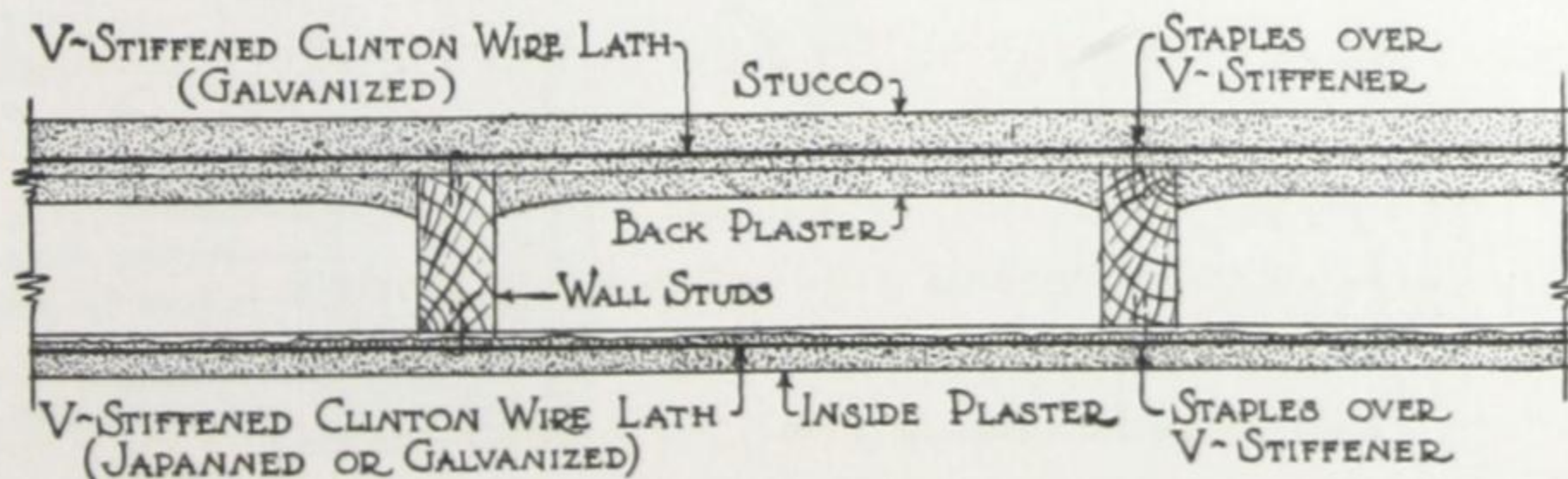
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Section of Stucco Wall with Sheathing

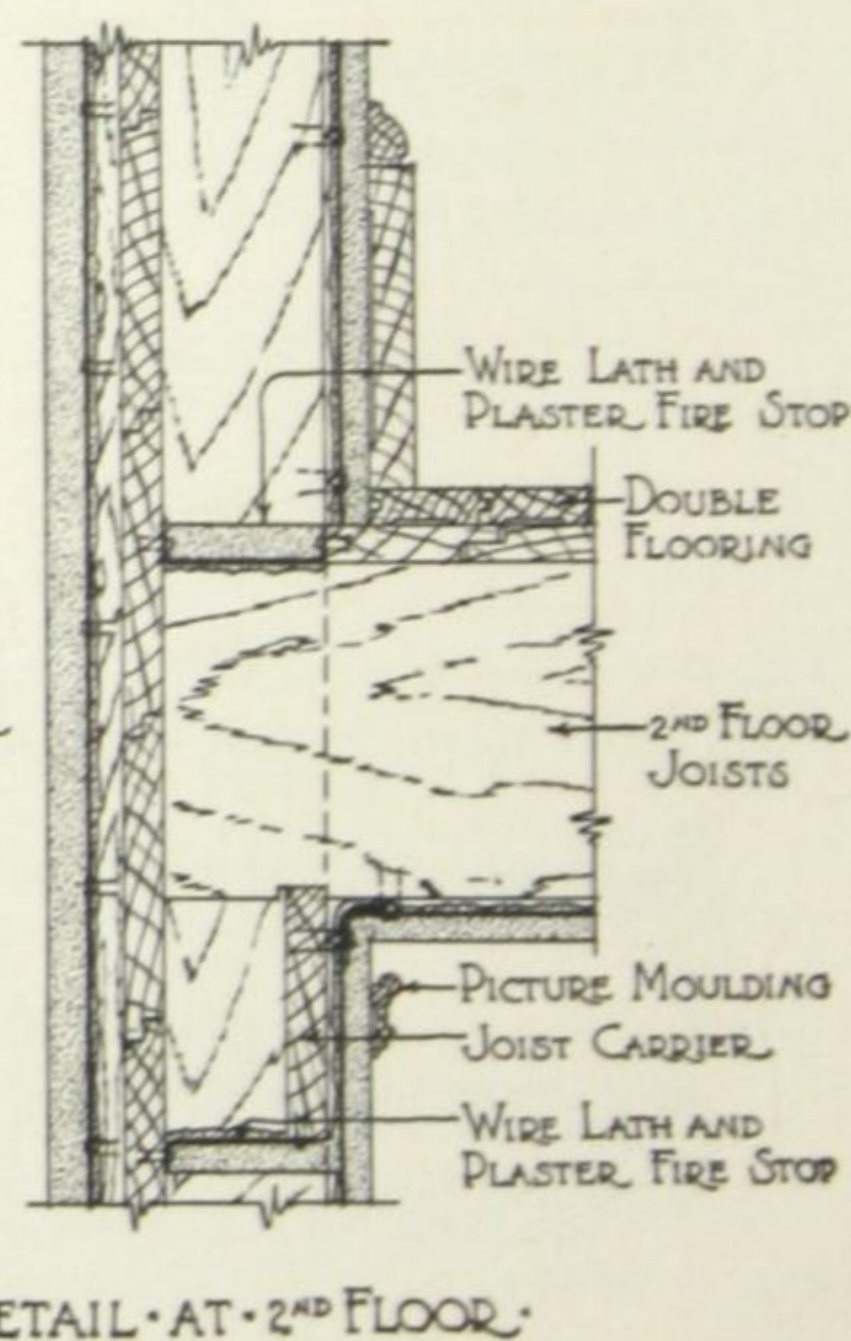
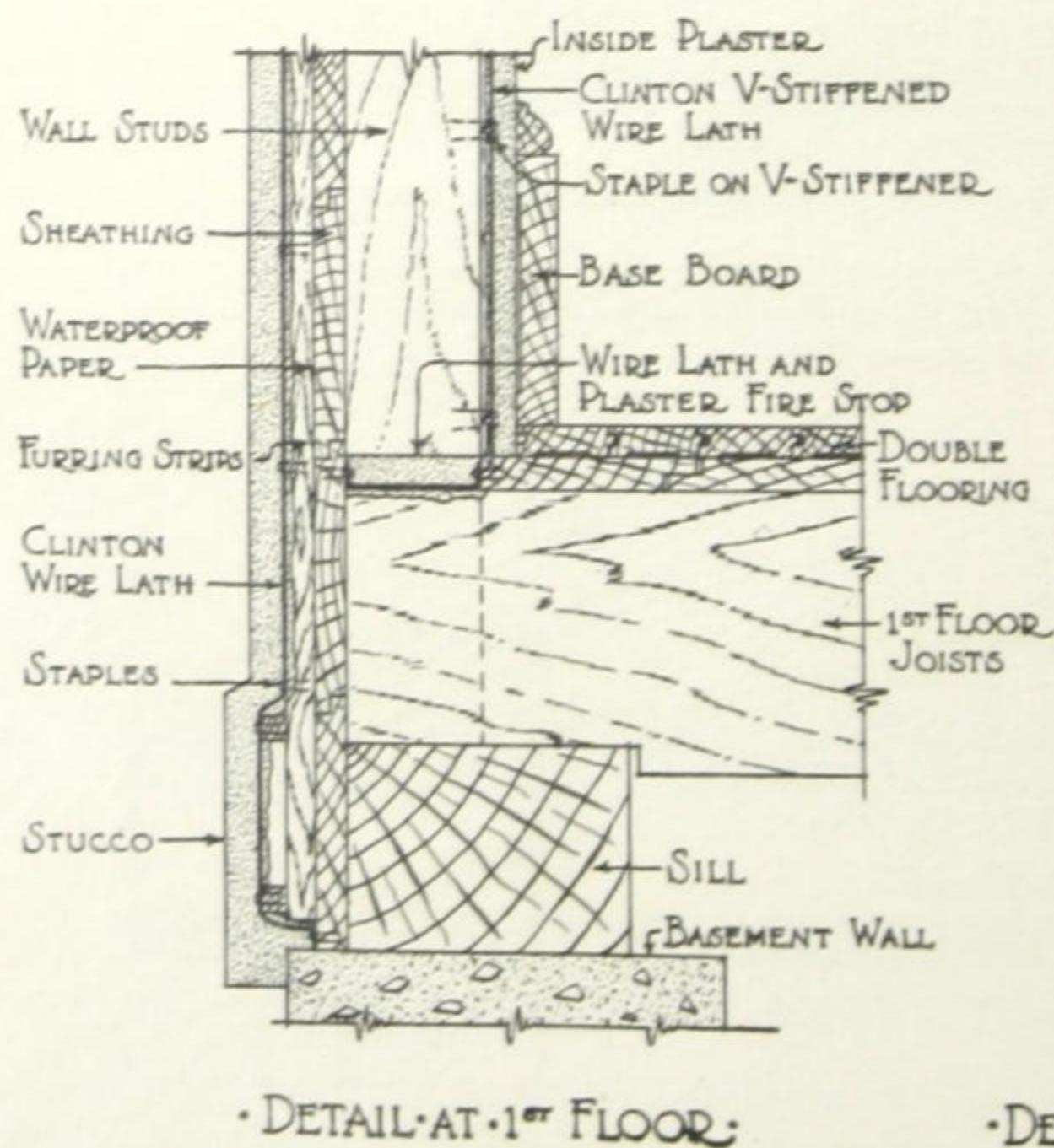
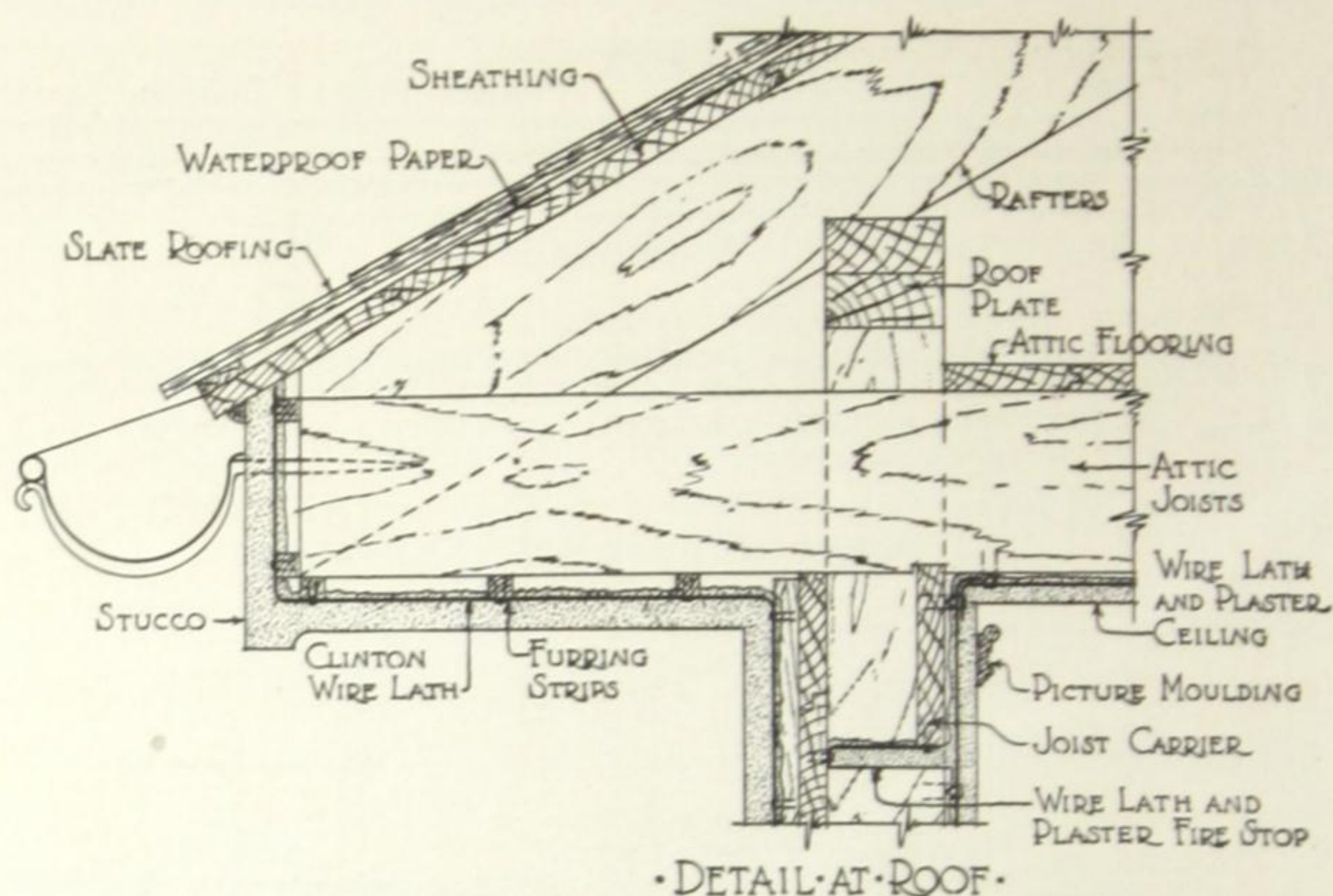


Section of Stucco Wall with Half-Timbered Exterior

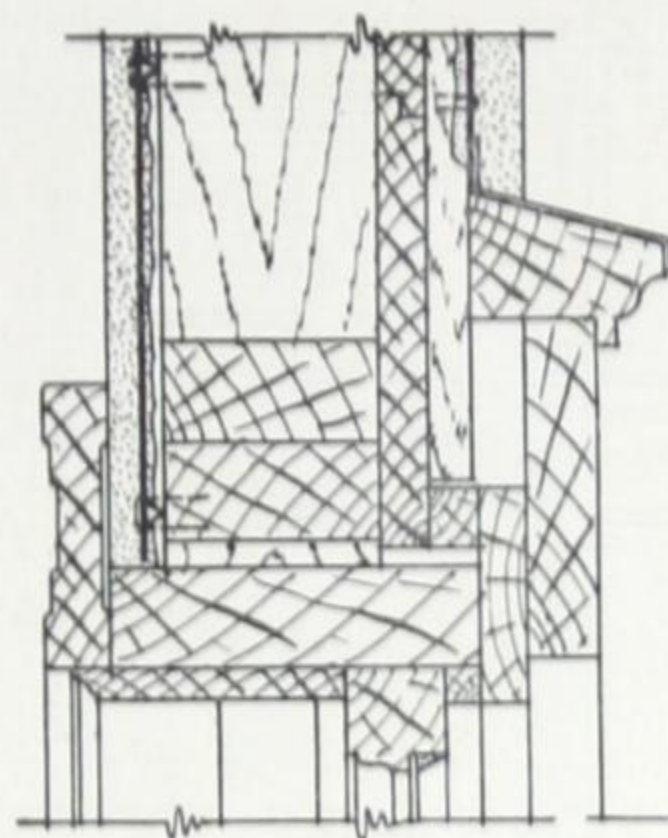
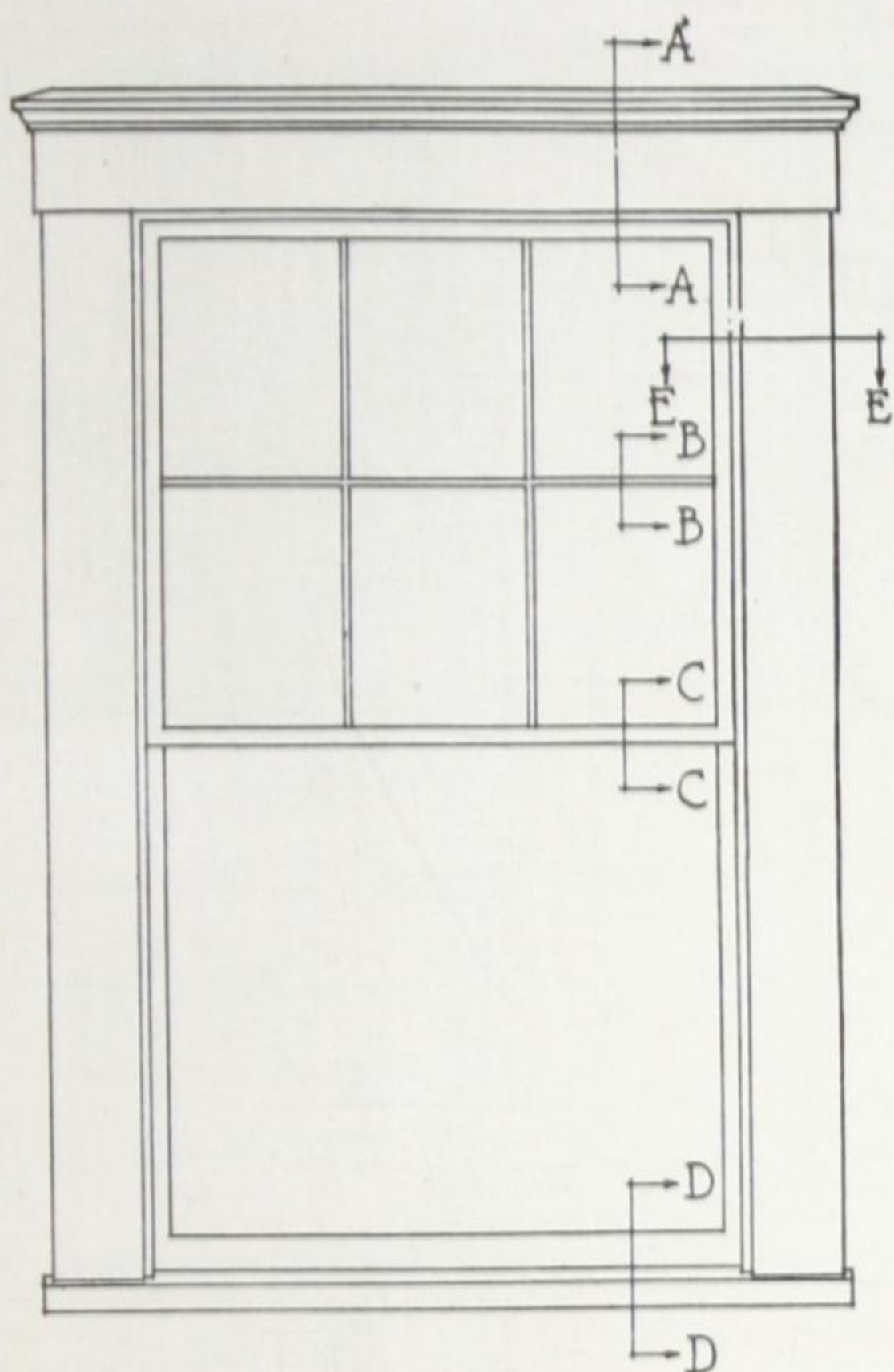


Section of Stucco Wall without Sheathing

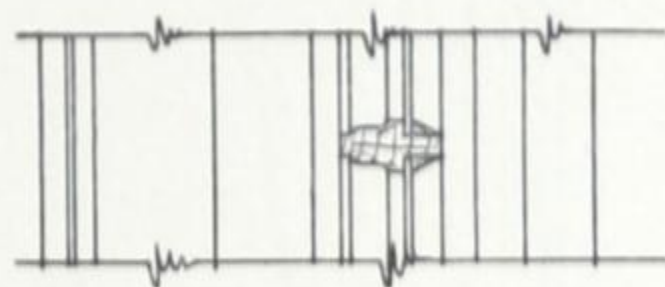
SUCCESSFUL STUCCO HOUSES



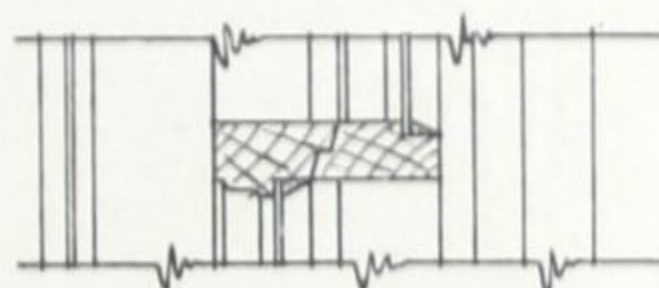
Stucco Wall Details



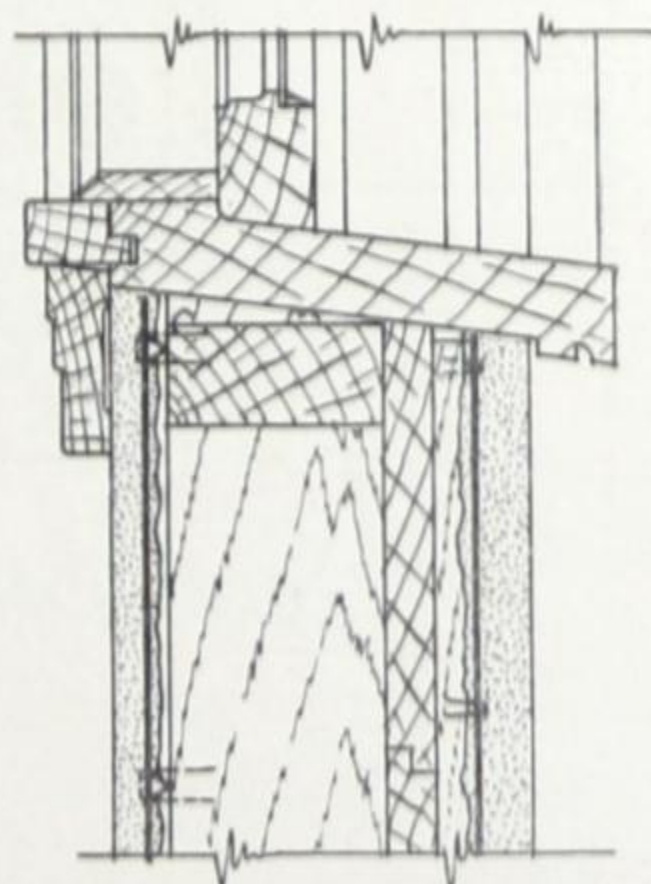
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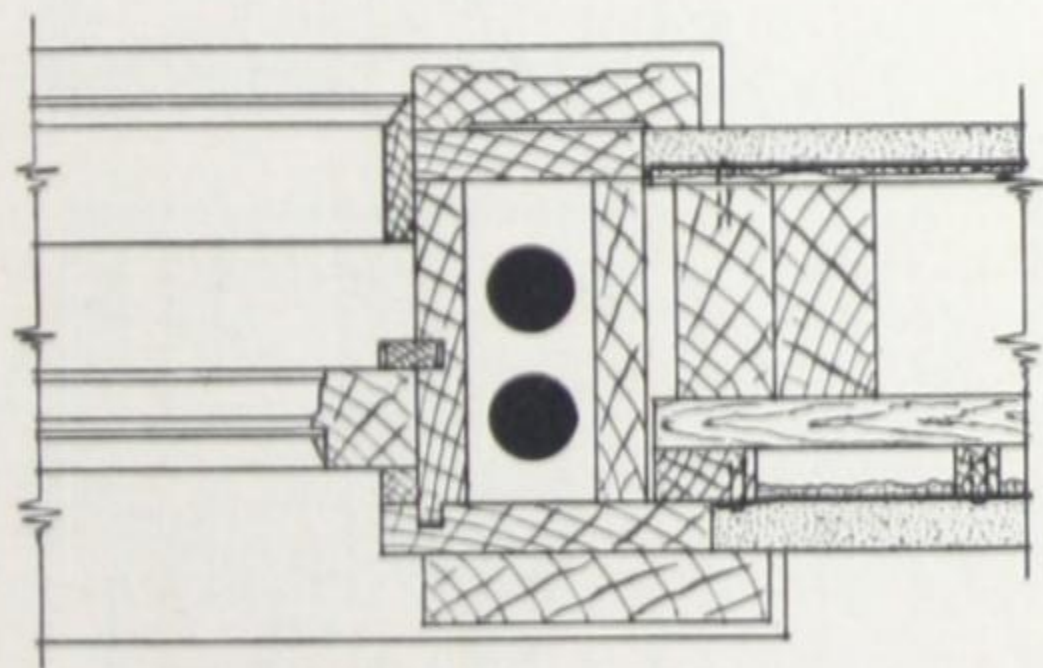
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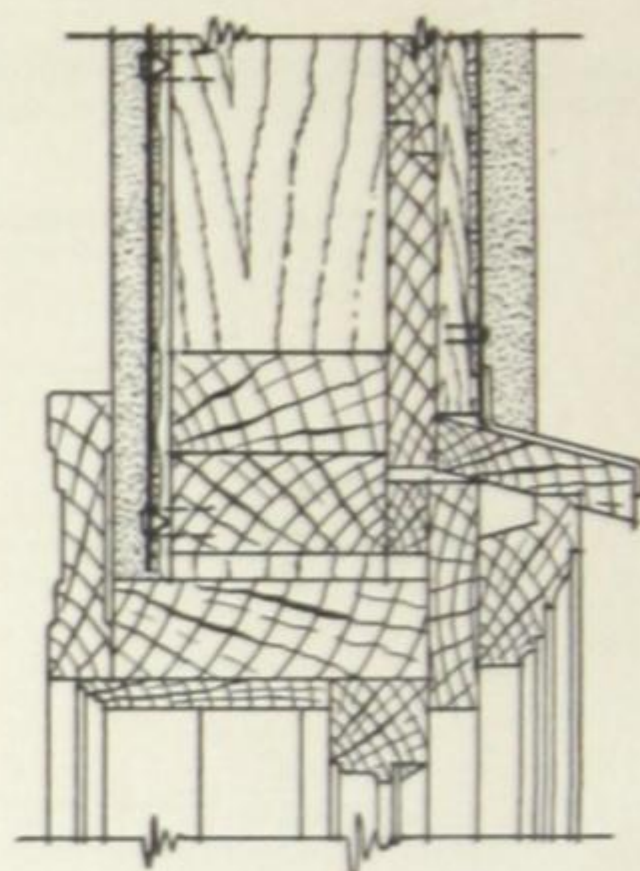
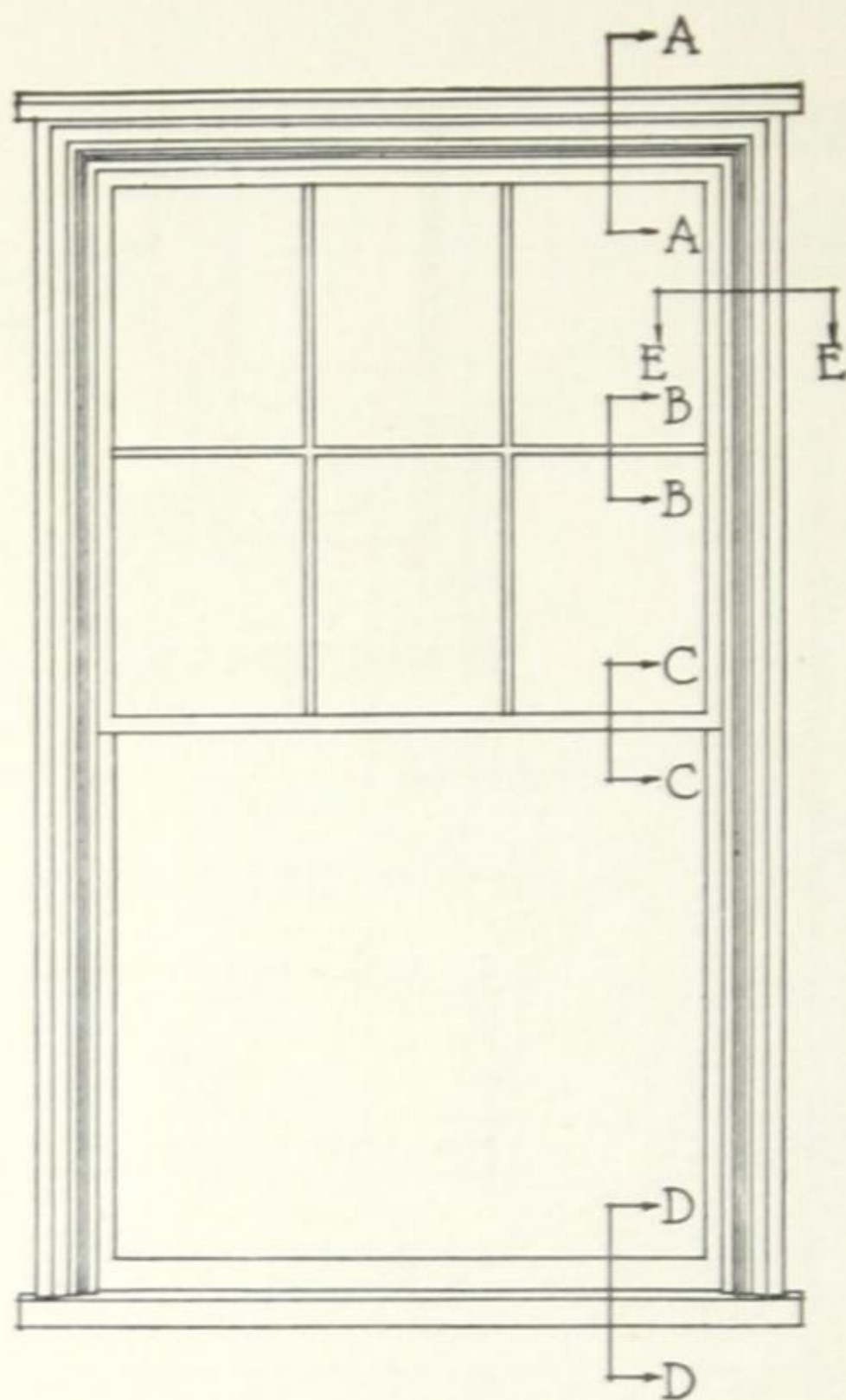


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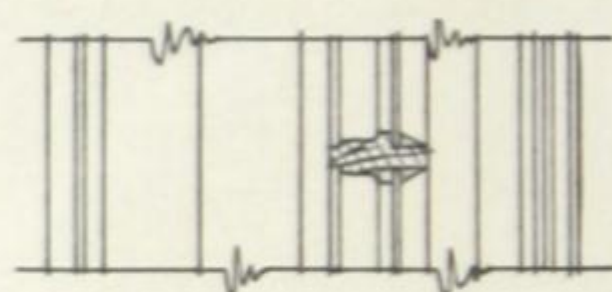


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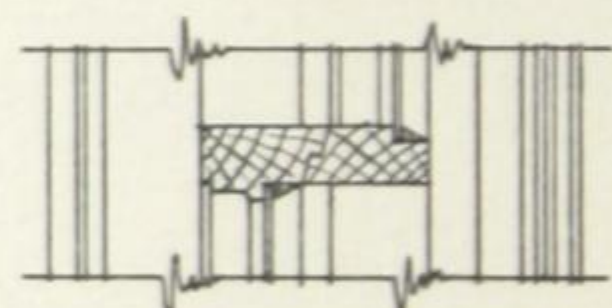
Double-Hung Window with Broad Trim



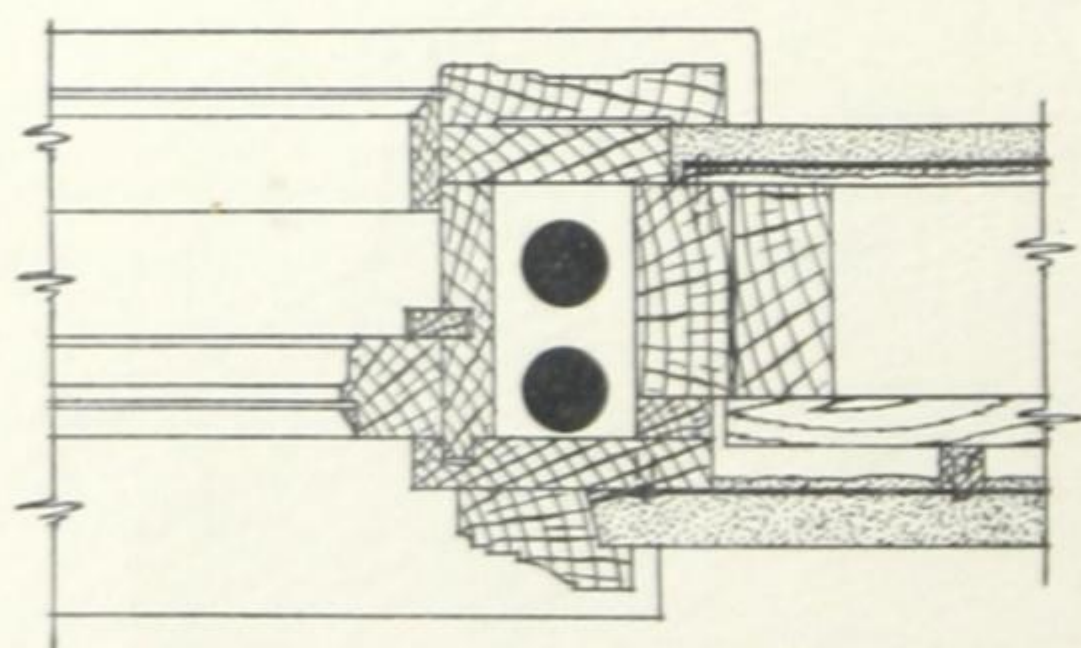
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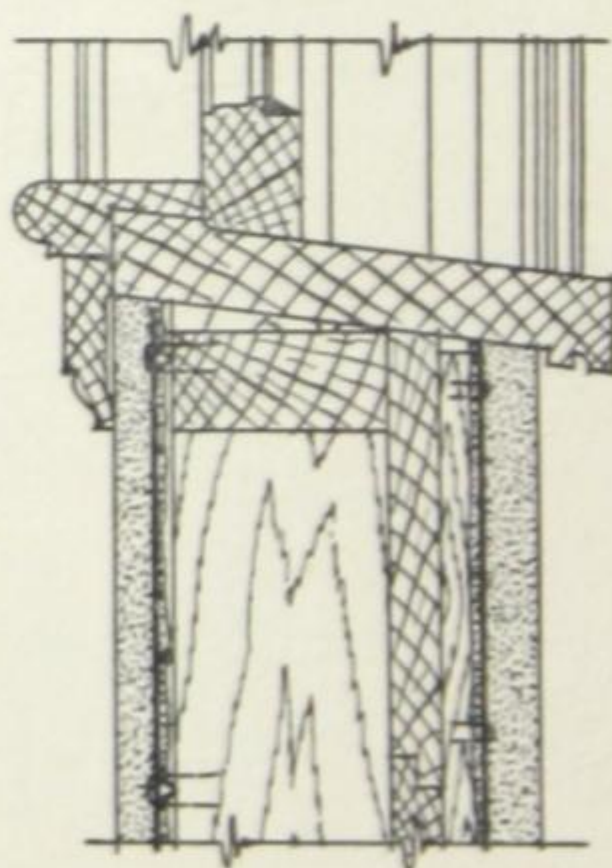
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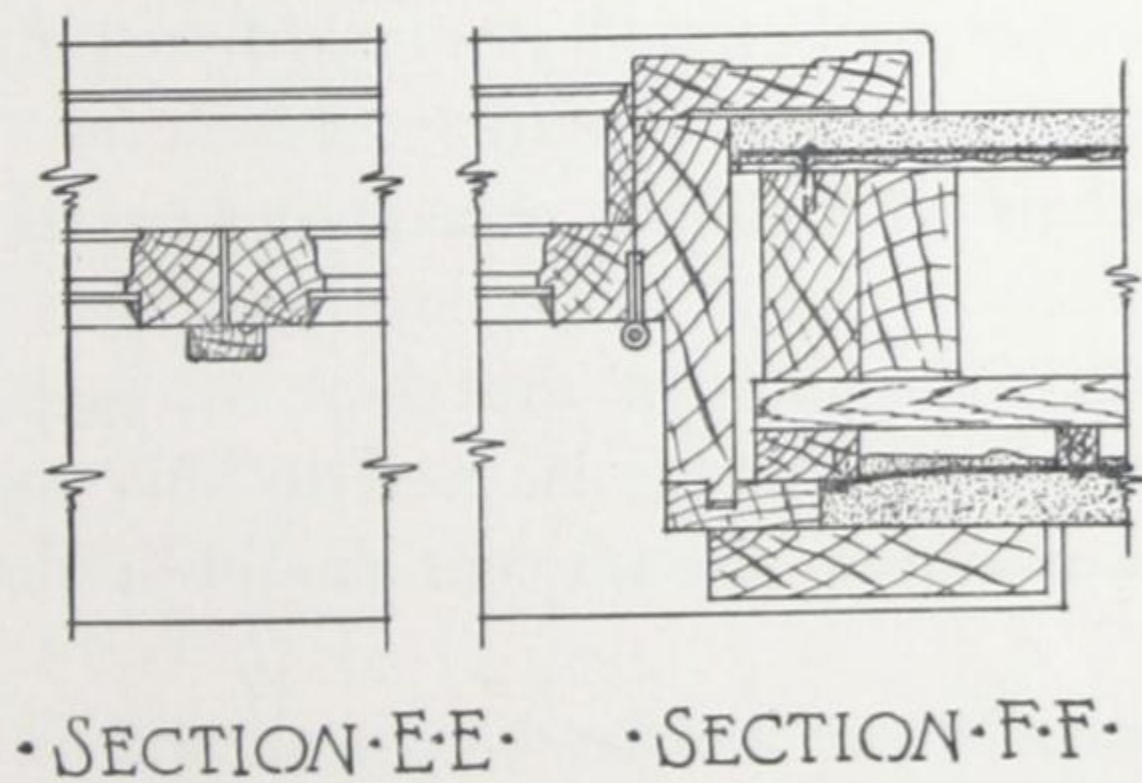
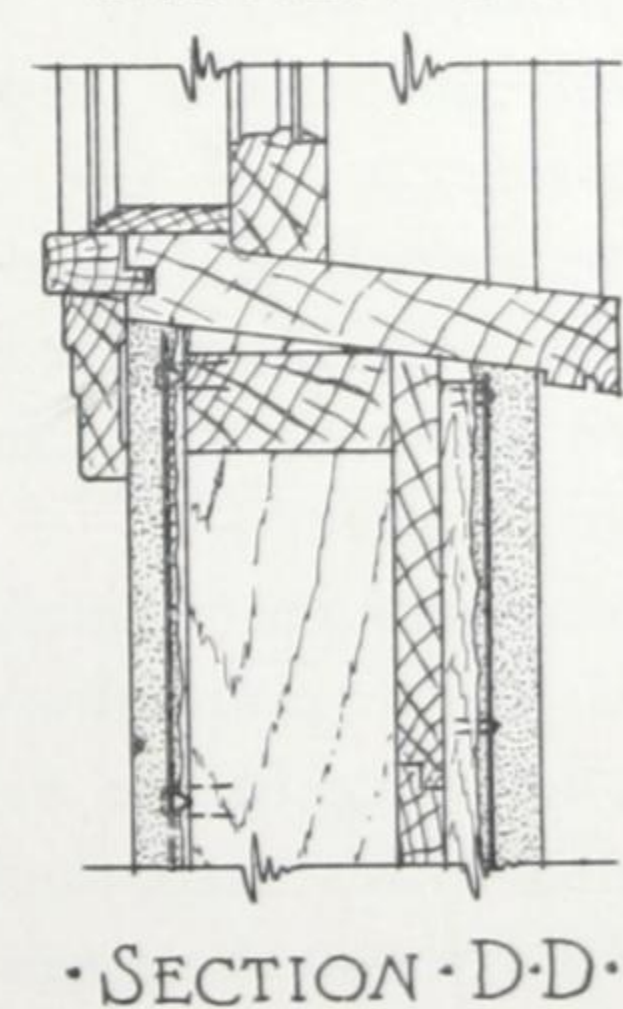
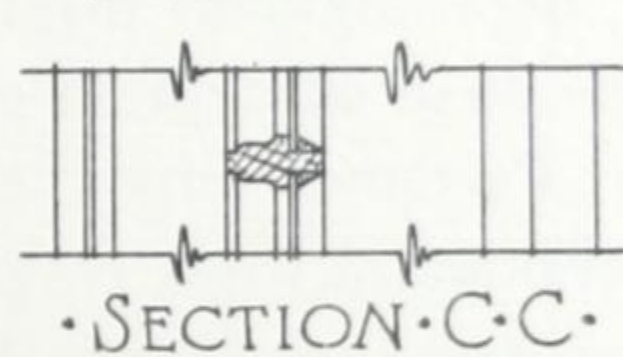
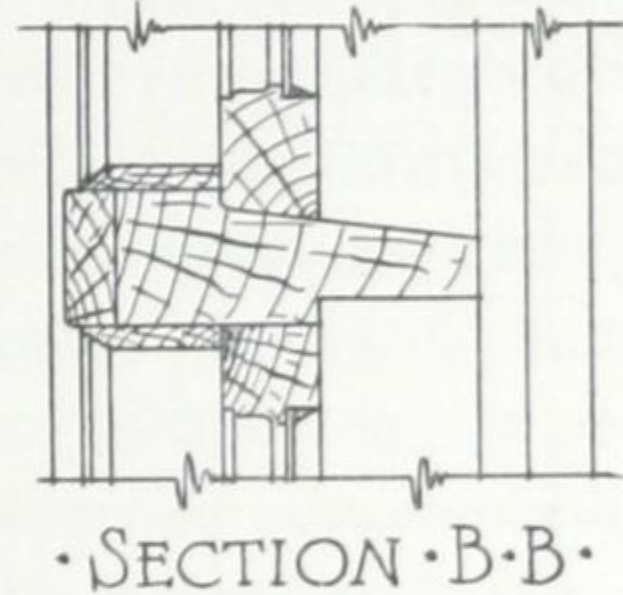
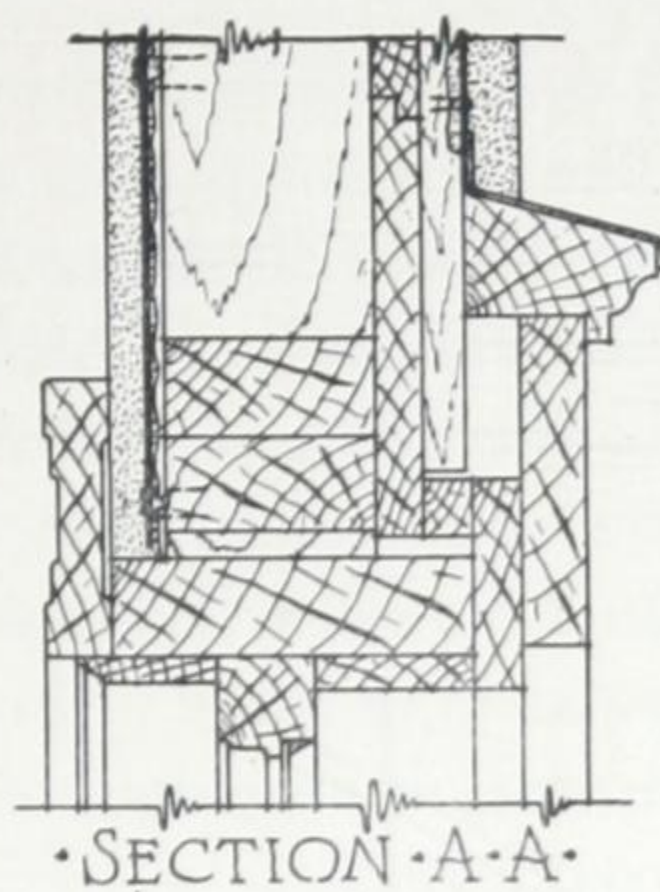
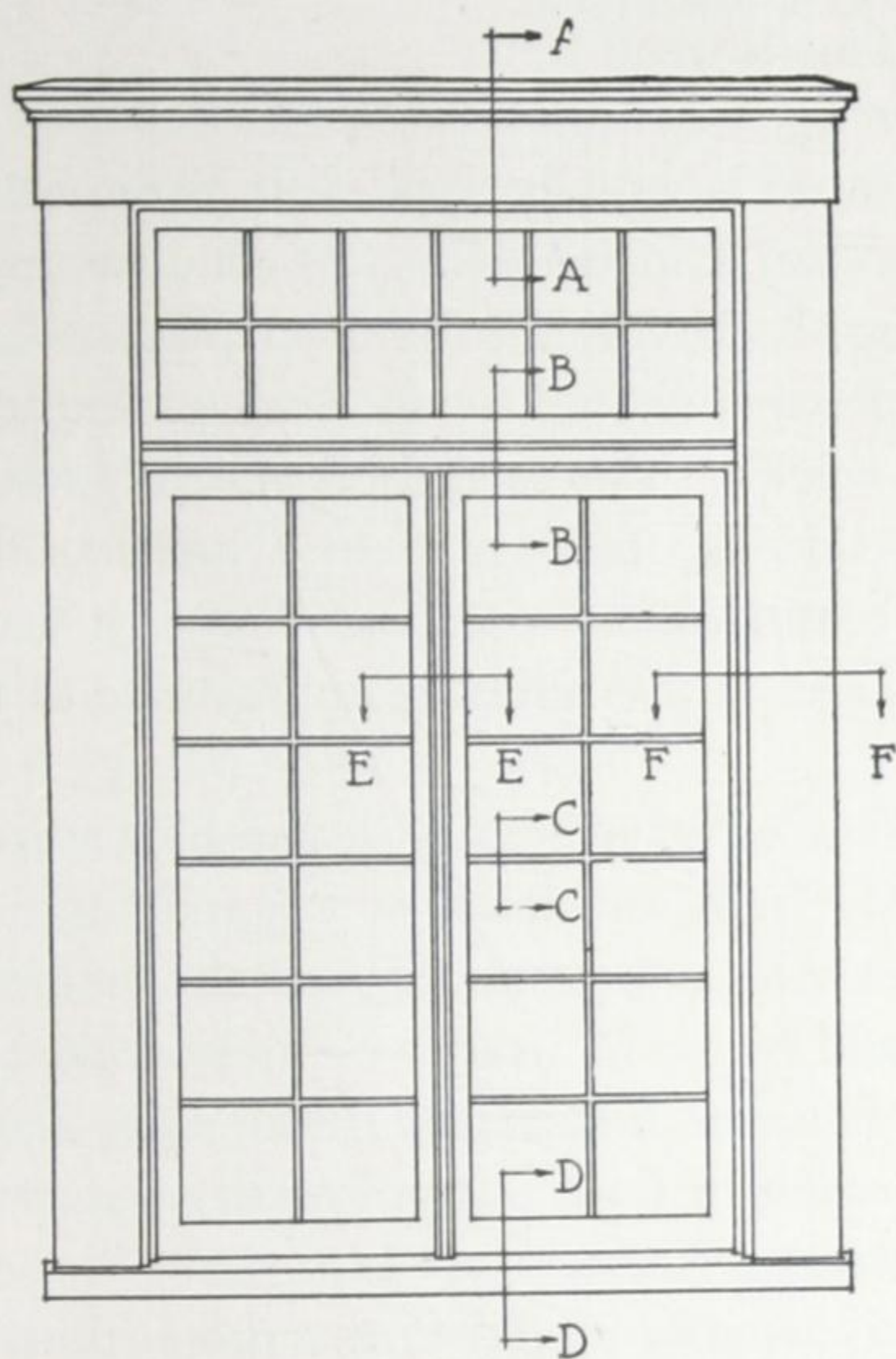


• SECTION E-E •



• SECTION D-D •

Double-Hung Window with Narrow Trim



Casement Window

The Stucco

The exterior plaster or stucco is usually applied in three coats, which should finish not less than 1 inch thick. In constructing a stucco wall without sheathing, however, the exterior plaster face, including its coat of back plaster, should finish not less than $1\frac{1}{2}$ inches or preferably 2 inches thick. The total thickness of exterior plaster, however, should in no case be less than 1 inch, as it is impossible to make a thinner wall waterproof, and thorough water tightness is absolutely essential to the ultimate appearance of the stucco finish.

Care should always be exercised in selecting the sand for stucco, to make sure that it is entirely free from loam or organic matter, as a dirty sand will prevent the proper setting of the cement. Lime or plaster of Paris should never be used for exterior plastering, as it is not durable, and is apt to disintegrate under the action of the weather. A small amount of lime putty, however, may be used, together with the Portland cement.

The first or scratch coat is usually mixed in the proportions of 1 part Portland cement to $2\frac{1}{2}$ parts of clean, coarse sand, with the addition of from 10 to 15 per cent of well-seasoned lime putty, to facilitate working. Hair binder is sometimes added to the scratch coat in the proportions of 2 pounds of hair to 1 barrel of cement.

The second or brown coat is usually of the same mixture as the scratch coat, except that no hair binder is used in this coat. Before applying the brown coat the scratch coat should be thoroughly dampened.

The finish coat usually consists of Portland cement and sand mixed in the proportions of 1 part of cement to 2 or 3 parts of sand. Owing to the variety of surface finishes which may be obtained with stucco, the ingredients of the finish coat vary greatly, depending upon the exact nature of the finish desired. Hydraulic lime, marble dust, cracked silicate, pebbles, marble screenings, coloring matter and other materials are often used in order to produce various effects of texture and coloring.

Surface Finish

Various degrees of roughness in the surface finish of the final coat may be developed, ranging from the smooth trowel finish to the rough cast, spatter dash or pebble dash finish. The rough surfaces, however, are always to be preferred, as they are not apt to show the fine checks or hair cracks, which are liable to occur in work of this kind.

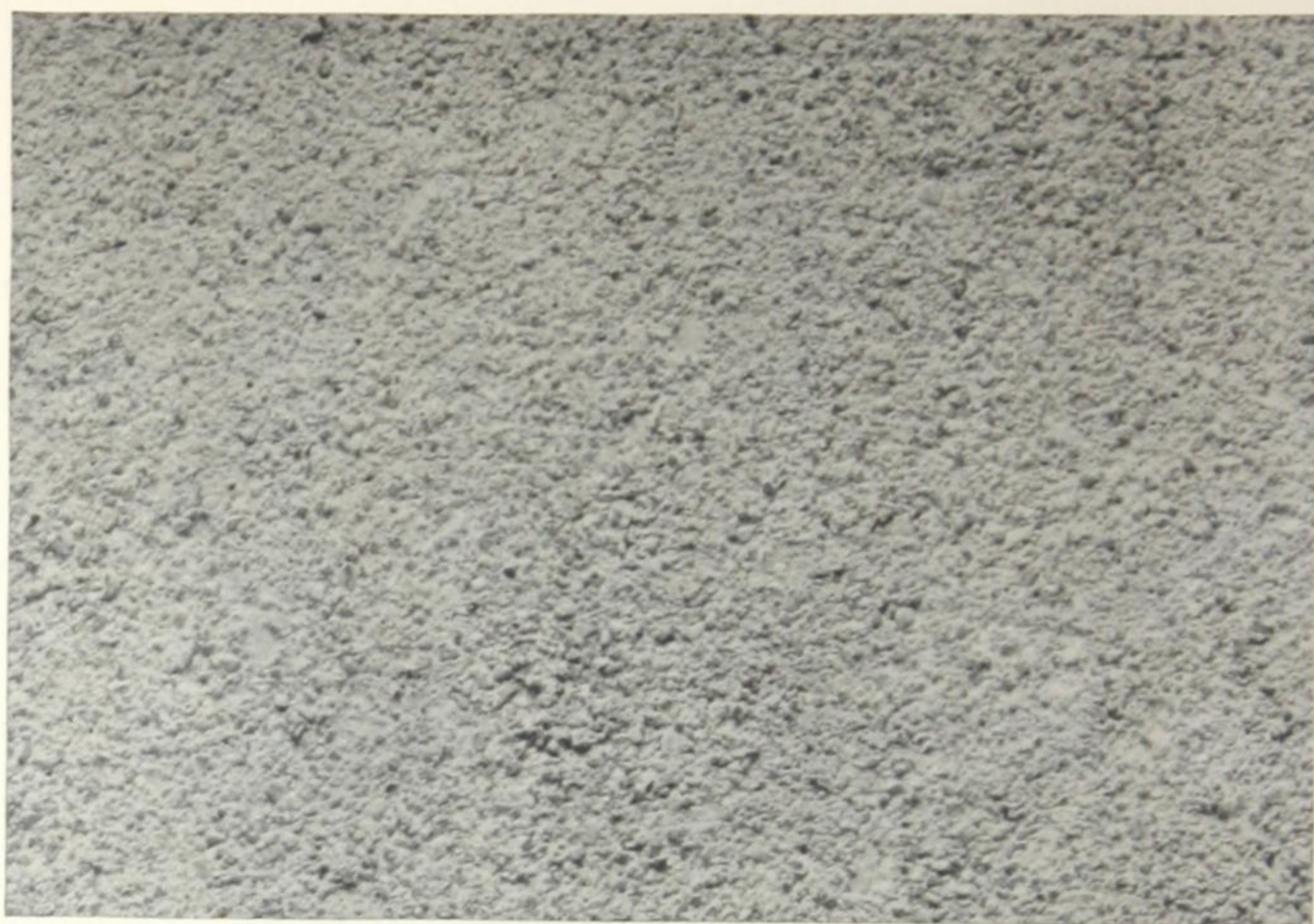
The smooth finish is obtained in the usual manner of floating to an even surface and troweling to a smooth finish, while the rough cast or rough suction finish is obtained by floating and drawing the surface rough.

The rough cast finish may be obtained by using trowels covered with carpet or burlap. It is not well to trowel the surface too much, however, as the plaster is liable to crack and fall off if the cement is disturbed after it has begun to set. To obtain the best results, the rough cast surface should really be what is sometimes called sand finish. This is done by using a slight excess of sand and having the plaster not very wet. The sand should be large grained and coarse, as this will add to the rough appearance of the surface.

The slap dash or spatter dash, when performed by experienced workmen is probably the most satisfactory and is more universally used than any of the various finishes. The slap dash is secured by throwing a creamy mixture of cement and sand against the wall, by dashing from a wooden paddle in such a way as to produce a roughened surface. A similar surface, although somewhat finer in texture, may be obtained by dashing from a stiff broom.

The pebble dash surface can be secured by applying the final coat fairly wet and then throwing clean pebbles into the fresh plaster. The pebbles must, of course, be distributed uniformly over the surface, and must be thrown against the fresh, soft plaster with sufficient force to imbed themselves securely. Pebble dash finish is sometimes obtained by mixing small pebbles with a creamy mixture of cement and sand and applying like the slap dash.

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Sand Float



Rough Suction

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Stippled

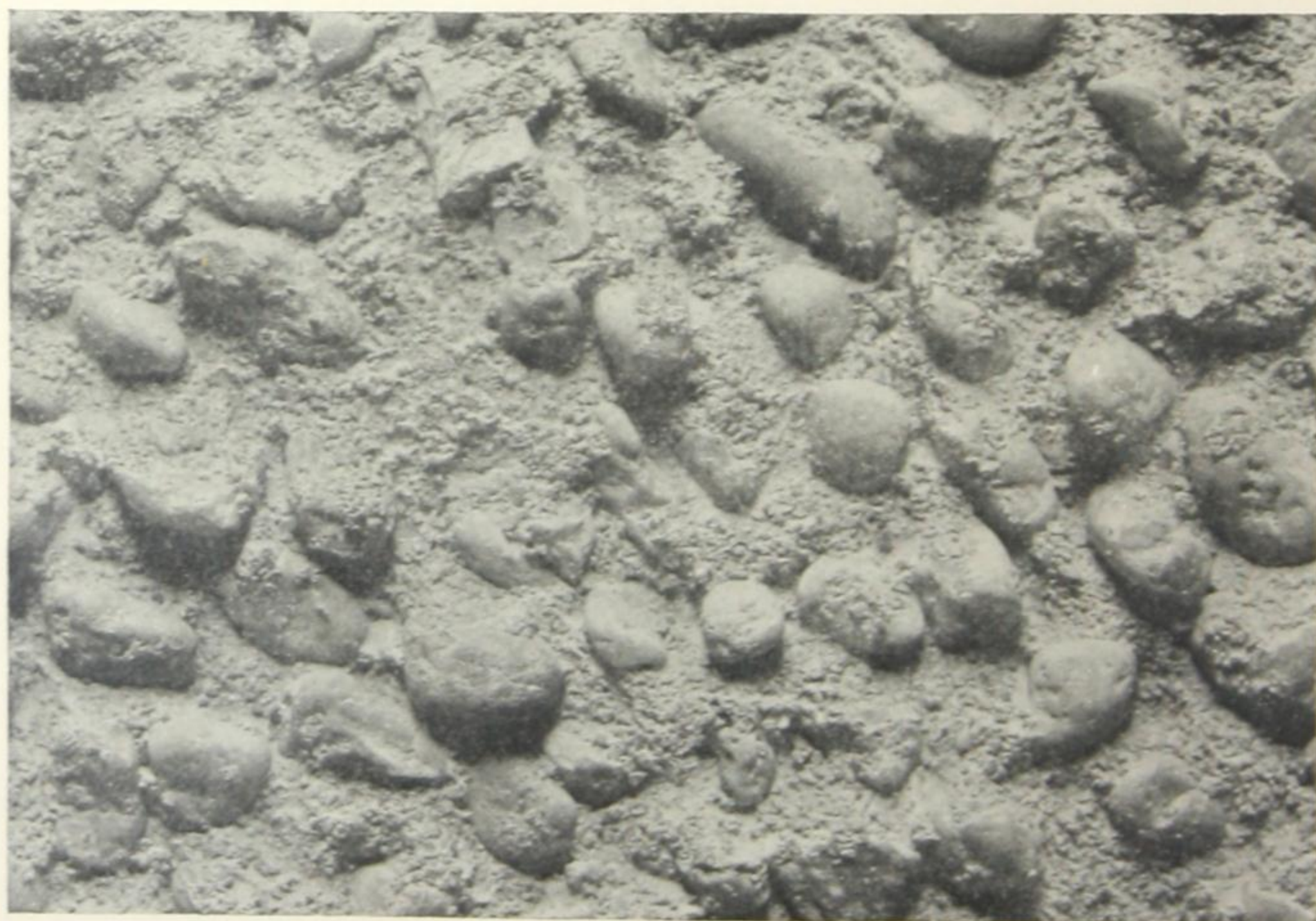


Slap Dash

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Pebble Dash



Pebble Cast

Colored Stucco

The finish coat, when desired, may be colored by mixing in various coloring materials, which should always be carefully proportioned in exact amounts, and these amounts should not be changed or varied. Unless the builder is thoroughly familiar with dry coloring materials, and has had considerable experience in the use of them, it is usually advisable when colored work is desired to use some of the prepared color stuccos. There are a number of these on the market and some have proved very satisfactory.

Coloring is sometimes obtained by mixing screenings of colored marble in the finish coat. These marble screenings may be green, red, buff, black or white, and, by cutting or scrubbing the surface with acid after it has hardened, thereby exposing the colored screenings, some very pleasing color effects may be obtained.

Colored Mortars

Colors Given to Portland Cement Mortars Containing 2 Parts River Sand to 1 Cement

Dry Material Used	Weight of Dry Coloring Matter to 100 Pounds of Cement			
	$\frac{1}{2}$ Pound	1 Pound	2 Pounds	4 Pounds
Lamp Black	Light Slate	Light Gray	Blue Gray	Dark Blue Slate
Prussian Blue	Light Green Slate	Light Blue Slate	Blue Slate	Bright Blue Slate
Ultra Marine Blue		Light Blue Slate	Blue Slate	Bright Blue Slate
Yellow Ochre	Light Green			Light Buff
Burnt Umber	Light Pinkish Slate	Pinkish Slate	Dull Lavender Pink	Chocolate
Venetian Red	Slate, Pink Tinge	Bright Pinkish Slate	Light Dull Pink	Dull Pink
Chattanooga Iron Ore	Light Pinkish Slate	Dull Pink	Light Terra Cotta	Dull Brick Red
Red Iron Ore	Pinkish Slate	Dull Pink	Terra Cotta	Light Brick Red

From *Cement and Concrete*, Louis Carlton Sabin; McGraw Publishing Co., N. Y.

Lathing Specifications for Exterior Stucco

General Requirements

- Intent** It is the intent of this specification to include the furnishing of all labor, materials, apparatus, ladders, scaffolding, hoisting and cartage necessary to supply, erect and complete all waterproofing, furring and lathing required to construct a substantial and proper foundation for exterior plastering.
- Wire Lath** The lath throughout shall consist of Clinton Wire Lath woven with $2\frac{1}{2}$ meshes per lineal inch and of size and type as hereinafter specified.
- Galvanizing** All lath used for supporting exterior plaster shall be thoroughly galvanized after woven, and no type of painted or dipped lath other than that which is galvanized will be accepted when used to support exterior plaster.
- Laps** All lath shall be lapped at least 1 inch where end joints are made and these joints shall be properly alternated or broken. Side joints shall be properly lapped and stapled in such a manner as to provide secure and unbroken continuity to the lathed surface.
- Staples** All lath applied to wooden supports shall be properly secured thereto with Clinton Galvanized Wire Staples as hereinafter specified.
- Workmanship** All lath shall be tightly drawn with proper tools and rigidly secured to all bearings. It shall finish fair and true to the required lines without bag, bulge or sag, being straight and smooth over all flat surfaces and properly bent for all molded and curved work.
- All lath shall be properly secured in place before plastering is begun and all necessary supports, connections and attachments shall be supplied and erected as required, leaving all surfaces in proper condition to receive the plaster.
- All waterproofing, furring and lathing of whatever kind or description shall be done with such materials and be of such arrangement and design as will meet the approval of the architect, and all labor in connection therewith shall be performed by skilled and experienced workmen in accordance with the best practice and requirements of the trade.

Walls with Wooden Sheathing

Where the wall framing is constructed with wooden sheathing, the exterior surface of the sheathing shall be waterproofed with an approved quality of 3-ply waterproof building paper of such thickness that 8 square feet will weigh 1 pound.

Waterproofing

This paper shall be laid in horizontal strips, beginning at the bottom of the wall with the first or bottom strip overlapping the base-board. Each layer of paper shall be secured to the sheathing with tacks provided with washers, and all tacking shall be done within 2 inches of the top horizontal edge of each strip. The lower horizontal edge of each strip shall lap the top edge of the one below at least 2 inches and shall be cemented thereto with approved liquid tar or asphalt compound.

Strips of the same paper as herewith specified shall extend around all openings and shall lap the flashings and be securely cemented thereto with approved liquid tar or asphalt.

After the sheathing is thoroughly waterproofed as hereinbefore specified, $\frac{3}{4}$ -inch wooden furring strips shall be set vertically at 12-inch intervals. These furring strips shall be securely nailed in place and leveled and plumbed in such a way as to provide a proper and secure foundation to receive the lath.

Furring Strips

Over the furring there shall then be applied No. 19 gage Clinton Galvanized Wire Lath.

Wire Lath

The lath shall be tightly drawn and lapped as hereinbefore specified and shall be securely stapled at 6-inch intervals along each furring strip with $\frac{3}{4}$ -inch No. 14 round top Clinton Galvanized Wire Staples.

Application of Lath

Wooden furring strips as hereinbefore specified may be omitted by using Clinton Wire Lath, provided with special $\frac{3}{4}$ -inch V-stiffeners. The lath for this purpose shall be No. 20 Clinton Galvanized Wire Lath provided with special V-stiffening ribs, the depth of which shall be not less than $\frac{3}{4}$ inch beyond the face of the lath. These V-shaped ribs shall be securely clamped to the transverse wires and shall extend across the full width of the fabric at intervals not exceeding 8 inches.

Special Stiffened Lath without Wooden Furring

Application of Special Stiffened Lath The special stiffened lath as hereinbefore specified shall be applied directly to the waterproofed surface with the apex of each stiffener coming in direct contact therewith and being securely connected thereto with special 1 ½ -inch No. 12 square top Clinton Galvanized Wire Staples.

The lath shall be tightly drawn and lapped as hereinbefore specified and shall have each stiffener secured at each end and at its center by staples as specified, which shall span the stiffener and be driven to a secure bearing into the wooden sheathing behind same.

Walls without Sheathing

Waterproofing Where the wall framing consists of wooden studs without sheathing, the exterior face of each stud and the sides of each stud to a depth of not less than 1 inch, or to such depth as may come in contact with the plaster, shall be waterproofed by thoroughly painting with approved liquid tar or asphalt compound.

Wire Lath After the studs have been properly waterproofed they shall be covered with No. 20 gage Clinton Galvanized Wire Lath, provided with standard V-stiffening ribs, the depth of which shall be not less than ⅜ inch beyond the face of the lath. These ribs shall be securely clamped to the transverse wires and shall extend across the full width of the fabric at intervals not exceeding 8 inches.

Application of Lath The standard V-stiffened lath as hereinbefore specified shall be applied directly to the exterior faces of the studs with the apex of each stiffener coming in direct contact therewith and with the stiffening ribs spanning across the space or opening between studs.

The lath shall be tightly drawn and lapped as hereinbefore specified, and each stiffener shall be secured to each stud with 1 ¼ -inch No. 13 square top Clinton Galvanized Wire Staples, which shall span the stiffener and be driven to a secure bearing into the wooden studs behind same.

NOTE. The inside walls and ceilings of stucco houses with wooden framing should be lathed by applying No. 20 V-Stiffened Clinton Japaned Wire Lath directly to the wall studs and floor joists. The lath should be properly lapped and stapled in accordance with the above specification.

Plastering Specifications for Exterior Stucco

General Requirements

It is the intent of this specification to include the furnish- Intent
ing of all labor, materials, apparatus, ladders, scaffolding,
hoisting and cartage necessary to supply, mix, install and
complete all plastering and all stucco finish as called for on
the plans or as designated by the architect.

All lime, cement, coloring matter, waterproofing compound Storing and
or other materials to be used in the preparation of plaster or Handling
stucco finish shall be properly protected when delivered to the Materials
work and shall not be placed on the ground against damp
walls or in any unventilated place. In no case shall mortar
be mixed on bare ground and when mixed in wooden boxes
they shall be absolutely water-tight.

While plastering is being done and for such a period sub-
sequent thereto as may be required to insure satisfactory work,
all plaster surfaces shall be properly protected against the
weather. In rainy or threatening weather all fresh surfaces
must be properly protected against the direct washing effect
of the rain. No fresh plaster shall be permitted to dry out
rapidly, and adequate precaution shall be taken to protect it
from the rays of the sun either by sprinkling after the mortar
has set hard enough to permit it or by hanging wet burlap or
other material over the plastered surface.

All plaster work of whatever kind or description shall be Plastering
done with such materials and with such appliances as will in General
meet the approval of the architect, and all labor in connection
therewith shall be performed by skilled and experienced work-
men in accordance with the best practice and requirements of
the trade.

All plastering in which cracks, pits, streaks, discolorations
or other defects may occur will be considered as inferior and
will not be accepted.

Materials

The lime shall be the best quality — evenly and thoroughly Lump
burned limestone. It shall be free from clinkers and shall Lime

contain not more than 15 per cent of impurities. It shall slack readily in water, forming a fine smooth paste without residue in excess of 15 per cent.

Hydrated Lime Hydrated limes of approved brands may be used in place of lump lime. All hydrated lime must be delivered to the work in original packages and shall be mixed in strict accordance with the manufacturer's specifications.

Portland Cement The cement shall be a high-grade, well-seasoned Portland cement of such composition and quality as will meet the requirements of the American Society for Testing Materials.

Plaster of Paris The use of plaster of Paris in connection with exterior plastering is positively forbidden and any work containing same will be immediately rejected.

Sand All sand shall be free from loam, salt or other impurities and shall be of angular grains, sharp, clean and properly screened.

Coloring Matter Mineral colors only shall be used in coloring exterior plaster, and the use of no coloring matter which is affected by lime or Portland cement, or which is not lasting under the action of the elements, will be permitted.

Water-proofing Compounds In case a special waterproofing is to be added to mortar for stucco work, it shall be done only with the approval of the architect. Such waterproofing shall be delivered to the work in original packages and applied in strict accordance with the manufacturer's specifications.

Water All water used for mixing mortars and plasters shall be clean and free from alkali, salt and other impurities.

Water used in mixing mortars shall be used only for that purpose and separate receptacles shall be provided to contain the water for cleaning and washing tools.

Preparation of Mortars

Mixing All mixing shall be done on a water-tight platform and the ingredients of the mortar shall be turned until they are thoroughly mixed to a uniform color. After dry materials are thoroughly mixed, sufficient water shall be added to obtain the desired consistency, and the mixing shall continue

until the mass is uniform in color and homogeneous in appearance.

Mortar shall be mixed only in such quantities as will permit of convenient and prompt application, and no mortar shall be applied after a time limit of one hour subsequent to the addition of the water. Any batch of mortar which may become partially set before application shall be discarded as the retempering of mortar is positively forbidden.

Mortar for the first coat shall be mixed in the proportions of 1 part of Portland cement to $2\frac{1}{2}$ parts of sand, the parts being measured by volume. A small amount of well-seasoned lime putty may be added to facilitate working, but lime putty shall not be added in excess of 15 per cent of the volume of cement.

The mortar for the second coat shall be mixed as specified for the first coat.

The mortar for the finish coat shall be mixed in the proportions of 1 part of cement to not less than 2 nor more than 3 parts of sand by volume. Well-seasoned lime putty may be added to facilitate working, but the amount of putty shall not exceed 15 per cent of the volume of cement.

The final coat may be colored by the addition of mineral coloring matter in such proportions as may be found to produce the desired color effect, but no coloring matter shall be added in excess of 6 per cent of the weight of the Portland cement.

In coloring the finish coat the proper amount of finely ground coloring matter shall be carefully weighed or measured and thoroughly mixed with the sand before the cement is added. The cement and lime shall then be added and the entire mass thoroughly mixed by shoveling from one side of the mixing board to the other through a $\frac{1}{4}$ -inch wire mesh screen. This process shall continue until the batch is of uniform color when sufficient water shall be added then to produce the proper consistency.

Application of Mortars

Exterior plastering shall be done in three coats, — first coat, second coat and finish coat.

Re-tempering

First Coat

Second Coat

Finish Coat

Colored Mixtures

Number of Coats

First Coat The lathing and walls shall first be thoroughly dampened and a heavy coat of mortar applied with sufficient force to secure a perfect key into the lath. The first coat shall have a thickness of not less than $\frac{3}{8}$ inch over the face of the lath and while wet shall be thoroughly scored or scratched with diagonal lines to present a roughened surface to receive the second coat.

Second Coat After the first coat has become dry, screeds accurately run with straight edges to form true plane surfaces shall then be set around all margins and at 5-foot intervals. The surface of the first coat shall then be thoroughly dampened and the second coat applied flush with the screeds and floated carefully to a true plane, finishing straight and true to a continuous even surface and of thickness which shall not be less than $\frac{3}{8}$ inch.

Back Plaster In case the wall is to be constructed without sheathing, the inside face of the lath shall be back-plastered after the first exterior coat has been applied and has become set. This back-plaster shall be applied to a thickness of at least $\frac{1}{2}$ inch beyond the innermost metal of the lath and shall be carefully troweled to a smooth surface and curved or beveled back against the studs.

Thickness of Plaster No exterior stucco plaster shall finish less than 1 inch in thickness when sheathing is used, nor shall the total thickness of exterior plaster be less than 2 inches when sheathing is omitted.

Finish Coat Before applying the finish coat the surface shall be thoroughly dampened in order to prevent absorption of moisture from the fresh mortar and the finish coat then applied to a thickness which shall not be less than $\frac{1}{4}$ inch.

The final coat shall be applied in such a way and with such materials as will produce the desired finish and the work shall be done as hereinafter specified under "Stucco Finish," the particular paragraph or section applying hereto being determined by the type or character of finish as designated by the architect.

Stucco Finish

Smooth Troweled The finishing coat shall be floated to a true surface and troweled smooth with a metal trowel, using as little rubbing as possible.

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The finishing coat shall be troweled smooth with a metal Stippled trowel and shall then be lightly patted with a brush of broom straw to produce an even stippled surface.

The finishing coat, after being brought to a smooth even surface, shall be rubbed with a circular motion of a wooden float. This floating shall be done when the mortar has partially set and a little sand shall be used to slightly roughen the surface. Sand Floated

After the finishing coat has been brought to a smooth even surface and before attaining final set, it shall be uniformly coated with a mixture of 1 part of cement to 2 parts of sand thrown against the wall with considerable force by dashing from a wooden paddle in such a way as to produce a roughened surface of uniform texture. Lighter shades may be obtained in this finish by adding hydrated lime in the proportion of 10 to 15 per cent of the volume of the cement. Slap Dash

After the finishing coat has been brought to an even surface it shall be spattered with a creamy mixture of equal parts of cement and sand mixed fresh every thirty minutes and kept well stirred in a bucket. This coating shall be applied with considerable force and shall be thrown against the surface by dashing the liquid from the bristles of the broom. This coating shall be applied while the finishing coat is still moist and before it has attained its final set. Lighter shades may be obtained in this finish by adding hydrated lime in the proportion of 10 to 15 per cent of the volume of the cement. Broom Dash

After the finishing coat has been brought to a smooth even surface and before attaining final set, it shall be uniformly coated with a mixture of 1 part of cement to 2 parts of sand to which has been added a small quantity of clean round pebbles or other material as selected not smaller than $\frac{1}{8}$ inch nor larger than $\frac{1}{4}$ inch. This mixture shall be thrown against the wall with considerable force by dashing from a wooden paddle. The object of this finish is to obtain, through the use of the pebbles, a roughened surface of coarser texture than that obtained by the ordinary slap dash finish. Lighter shades may be obtained in this finish by adding hydrated lime in the proportion of 10 to 15 per cent of the volume of the cement. Pebble Dash

Pebble Cast After the finishing coat has been brought to a smooth even surface and before attaining initial set, clean round pebbles or other material as selected, not smaller than $\frac{1}{4}$ inch or larger than $\frac{3}{4}$ inch, shall be thoroughly wetted and then thrown with considerable force against the wall so as to embed themselves in the fresh mortar. They shall be distributed uniformly over the surface of the final coat and may be pushed back into the mixture with a clean wood trowel, but no rubbing of the surface shall be done after the pebbles are embedded.

Exposed Aggregates The finishing coat shall contain a predetermined amount of approved coarse aggregate, such as crushed granite, marble or other material as may be selected. It shall be floated and troweled to a smooth even surface and within 24 hours after being applied shall be scrubbed with a stiff broom and water. In case the cement has become too hard for this treatment, a solution of 1 part hydrochloric acid in 4 parts of water by volume may be used in place of the water. After the particles of aggregate have been uniformly exposed by scrubbing, care shall be taken to remove all traces of the acid by spraying the surface with a hose.

Specifications for Interior Plastering

General Requirements

It is the intent of this specification to include the furnishing of all labor, materials, apparatus, ladders, scaffolding, hoisting and cartage necessary to supply, mix, install and complete all plain and ornamental plastering as called for on the plans or as designated by the architect. Intent

All plaster, lime and cement when delivered to the work shall be properly protected and shall not be placed on the ground, against damp walls or in any unventilated place. Storing and Handling Materials

In no case shall mortar be mixed on bare ground and when mixed in wooden boxes they shall be absolutely water tight.

When plastering is being done the building shall be properly enclosed against the weather and shall be otherwise kept in suitable working condition. In extreme warm weather proper precaution must be taken to prevent fresh plaster from drying out too rapidly, and in extreme cold weather precaution must be taken to prevent plaster from freezing.

All plaster work of whatever kind or description shall be done with such materials and with such appliances as will meet the approval of the architect, and all labor in connection therewith shall be performed by skilled and experienced workmen in accordance with the best practice and requirements of the trade. Plastering in General

All plastering in which fire cracks, pits, checks, waves, laps, streaks, cat-faces, popping, blistering, discolorations or other defects may occur will be considered as inferior and will not be accepted.

Materials

Lime used for plastering shall be the best quality, evenly and thoroughly burned limestone. It shall be free from clinkers and shall contain not more than 15 per cent of impurities. It shall slack readily in water, forming a fine smooth paste without residue in excess of 15 per cent. Lump Lime

Hydrated limes of approved brands may be used in place of lump lime. All hydrated lime must be delivered to the work in original packages and shall be mixed in strict accordance with the manufacturer's specifications. Hydrated Lime

Prepared Plasters All patented or prepared plasters and all Keene cements shall be of approved brands and shall be received at the building operations in original packages. They shall be mixed and applied in strict accordance with the manufacturer's specifications, and in all cases where such patented or prepared plasters may be used those specifications shall become a part of and be included in the general scope and intent of this specification.

Portland Cement All cement used for gaging lime mortars or for preparing cement mortars as hereinafter specified shall be a high-grade, well-seasoned Portland cement of such composition and quality as will meet the requirements of the American Society for Testing Materials.

Sand All sand shall be free from loam, salt or other impurities and shall be of angular grains, sharp, clean and properly screened.

Binder The binder shall be water soaked, well beaten, clean, long winter hair or approved vegetable fiber cut in 2 to 3 inch length.

Water All water used for mixing mortars and plasters shall be clean and free from alkali, salt and other impurities.

Water used in mixing mortars and plasters shall be used for no other purpose, and separate receptacles shall be provided to contain water used for cleaning and washing tools.

Lime Mortars

Scratch Coat The mortar for the scratch coat shall be mixed in the proportions of 1 barrel of lump lime to 2½ barrels of clean, sharp sand and binder, in the proportion of 2 pounds of hair or 3 pounds of fiber to 100 pounds of lump lime. Or the mix may be proportioned as follows: to 1,000 pounds of unslacked lime add 1 cubic yard of clean, sharp sand and 10 pounds of hair or 15 pounds of fiber.

The lime shall be thoroughly slacked and the putty shall be allowed to cool before incorporating the hair, in order to avoid burning. The proper amount of sand shall then be thoroughly mixed in and the mortar banked for at least three days.

Brown Coat The mortar for the brown coat shall be composed of 1 barrel of lump lime to 5 barrels of clean, sharp sand, with binder in the proportion of 1 pound of hair or fiber to 100 pounds of

lump lime. Or the mix may be proportioned as follows: to 500 pounds of unslacked lime add 1 cubic yard of clean, sharp sand and $2\frac{1}{2}$ pounds of hair or fiber.

The mortar for the brown coat shall be prepared as for the scratch coat and banked for at least three days before using.

All lime mortar for both the scratch and the brown coats shall be gaged with Portland cement, in the proportions of 1 part of cement to 10 parts of mortar. Gaging

All mortar shall be gaged in such quantities as will permit of convenient and prompt application, and no gaged mortar shall be applied after a time limit of one hour subsequent to the addition of the cement.

The finish coat shall consist of white mortar gaged with plaster of Paris, the white mortar consisting of a well-slacked lime putty, with marble dust or white sand in combination. Finish Coat

In preparing the white mortar, the lime shall be thoroughly slacked in a box, mixing in a small proportion of white sand or marble dust. It shall then be run through a No. 10 mesh wire sieve into a storage box and allowed to stand for at least forty-eight hours before gaging with the plaster. The finish coat shall be mixed in the proportions of 1 part of plaster of Paris to 2 parts of white mortar. The mortar and plaster shall be mixed only in such quantities as will admit of convenient handling, and after gaging with the plaster the finish coat shall be promptly applied.

Patented or Prepared Plasters

Instead of the lime mortars as herewith specified, the contractor may use patented or prepared plasters of standard recognized quality, but in case of such substitution the contractor shall duly notify the architect in writing as to the particular brand intended for use. Notification

The architect may, at his discretion, accept or reject any brand of prepared plaster thus submitted for his consideration. After approval of any particular brand, that brand, and none other, shall be used, and all such plaster shall be received at the building operations in original packages and shall be mixed and applied in strict accordance with the manufacturer's specifications. Approval of Brand

Plain Plastering

- Number of Coats** All plain plastering on wire lath shall be three-coat work, — scratch coat, brown coat and finish coat. No “laid-on ” work will be permitted, but each coat must be thoroughly dry or set before the next coat is applied.
- Applying the Scratch Coat** The scratch coat, which shall not be less than $\frac{1}{4}$ inch thick, shall be well keyed into the lath and shall be applied with such force as to secure a perfect clinch. The scratch coat while wet shall be thoroughly scored or scratched with diagonal lines nearly through its thickness.
- Applying the Brown Coat** After the scratch coat has become dry, screeds accurately run with straight edges to form true plane surfaces shall then be set around all margins and at 5-foot intervals. In applying the brown coat the areas between screeds shall be filled flush with the screeds and floated carefully to a true plane, finishing straight and true to a continuous even surface within $\frac{1}{8}$ inch of the finished plaster face.
- Applying the Finish Coat** The finish coat must be evenly applied and shall be properly troweled to a perfectly true, smooth and hard surface, having an egg-shell gloss of even color without stain, mark or defect of any kind. Where sand finish is called for it shall be applied before the brown coat is quite dry, or, if dry, the brown coat shall be wet down and the sand coat troweled or floated to the desired finish.
- Workmanship** All surfaces shall be straight edged in every direction, walls plumb, ceilings level and all jams and angles straight, true and perfect. All exterior vertical and horizontal angles unless set with corner beads shall be bull nosed to $\frac{1}{2}$ inch radius with stop above the base line and at other points as directed, and all interior angles shall be finished clean, straight and true.

Ornamental Plastering

- Models** Models made by experienced modelers shall be prepared and furnished as may be required by the architect for all molded or ornamental plaster work. All models shall conform in size and detail with the approved drawings and shall in each case include a proper and sufficient section of the feature of which the model or sections form a part.

Ceiling beams shall be formed where indicated or specified with true, straight arrises and surfaces and with sharp, exact angles. Ceiling panels shall be formed where indicated or specified with moldings and sinkages in accordance with the detailed drawings. They shall be accurately centered and spaced and all miters and moldings shall be accurately lined and formed in a workmanlike manner. Paneled
Ceilings

Cornices shall be run where indicated or specified, accurately reproducing the profiles as indicated on the detailed drawings with ornaments as shown and with all angles and intersections accurately and correctly made. Cornices

All moldings, enrichments, panels, brackets, etc., shall be sharp, crisp, hard and perfectly formed. All moldings shall be run with accurate metal forms, faithfully reproducing the profiles as shown on detailed drawings and shall be made with clean, sharp, accurate angles, intersections and miters. Enrich-
ments, etc.

All ornaments shall be cast in new clean cut molds, accurately reproducing the models, and the castings shall be clean and sharp, with full relief and under cut work where shown or required.

All ornament shall be accurately centered and spaced and shall be fixed and placed in position with absolute security. All ornament erected in sections shall be carefully and accurately connected and all trimming, filling and washing shall be done in a neat and workmanlike manner.

All molds which may through usage or accident become clogged, dented, deformed or otherwise rendered unfit for use shall be discarded and new molds shall be provided as often as is necessary to secure exact and perfect castings in every case. Molds

Preparation for Tiling

Where walls in bath-rooms, lavatories and other places are furred and lathed to receive tile, the mortar shall be composed of 1 part Portland cement, 3 parts of clean, sharp sand and 10 per cent of lime putty or hydrated lime with sufficient hair or fiber binder. Cement
Mortar

This mortar shall be applied with sufficient force to establish a perfect key into the lath and shall be properly scored or Application
of Mortar

scratched with diagonal lines to receive the tile. This preparatory surface shall be run true and fair to the proper lines and shall finish at the proper level to receive the tile and bedding for same so that the tile will finish with proper off-set from the plastered walls above.

Plastering on Concrete, Brick and Masonry

Number of Coats All plastering on brick, masonry or concrete shall be two-coat work, being done only in the brown and finishing coats and shall finish at least $\frac{1}{2}$ inch thick.

Concrete Surfaces When plastering is applied to concrete surfaces the surface shall be clean, free from oil and properly prepared for binding and keying the plaster. If it is not practical to put the concrete surface in proper condition to receive the plaster, the work shall be properly furred and lathed and plaster applied in accordance with the specifications for three-coat work.

Brick Surface When plastering is applied to brickwork or masonry the surfaces must be thoroughly clean and the joints left rough or open before the plastering is applied. Any slight irregularities in the surface shall be taken care of in the brown coat; but in the case of serious irregularities the surface shall be properly furred and lathed and plaster applied in accordance with the specifications for three-coat work.

Clinton Wire Lath

Clinton Quality

Clinton Wire Lath is a superior product and must not be classed among the many cheap and make-shift metal laths with which the market is now flooded. It has been the recognized standard of quality for over half a century and is the most efficient and trustworthy lathing material in use at the present time.

The Clinton Wire Cloth Company, the originator of wire cloth weaving, was the first concern to engage in the manufacture of fireproof lath. Soon after the invention of power looms for the weaving of woolens and cotton, the Clinton Wire Cloth Company perfected a form of loom for weaving wire and entered into the manufacture of their wire lath. This woven wire mesh was the first efficient form of metal fireproofing ever used. It was used for fireproofing purposes as early as 1856, and many buildings are now standing which were fireproofed with this material at that time.

Clinton Wire Lath is not the cheapest lath on the market, but it is the best and, everything considered, is by far the most economical. The methods of manufacture and the materials which enter into Clinton Lath have always been of the very best. Even in the face of keenest competition, no item which would add to quality has ever been sacrificed in the making of the Clinton product. The reputation of Clinton Wire Lath has been established by years of honest, reliable and careful methods of manufacture, which assure the purchaser that every roll of Clinton Lath will possess this unvarying Clinton quality and will be honestly and correctly tagged as to gage, mesh and quantity.

Years of Successful Use

Boston Theatre a Test of Sixty Years. Among the many notable instances in which Clinton Wire Lath has shown its real efficiency may be mentioned the case of the Boston Theatre, which was built about 1856 and in which Clinton Wire Lath was used. Some of the lath placed in this building at the time it was first

built has at times been removed in making certain alterations, and when thus taken out has been found to be in perfect condition. The lath in this building has given such perfect satisfaction that in all these years there have been no indications whatever of cracking or loosening of the plaster.

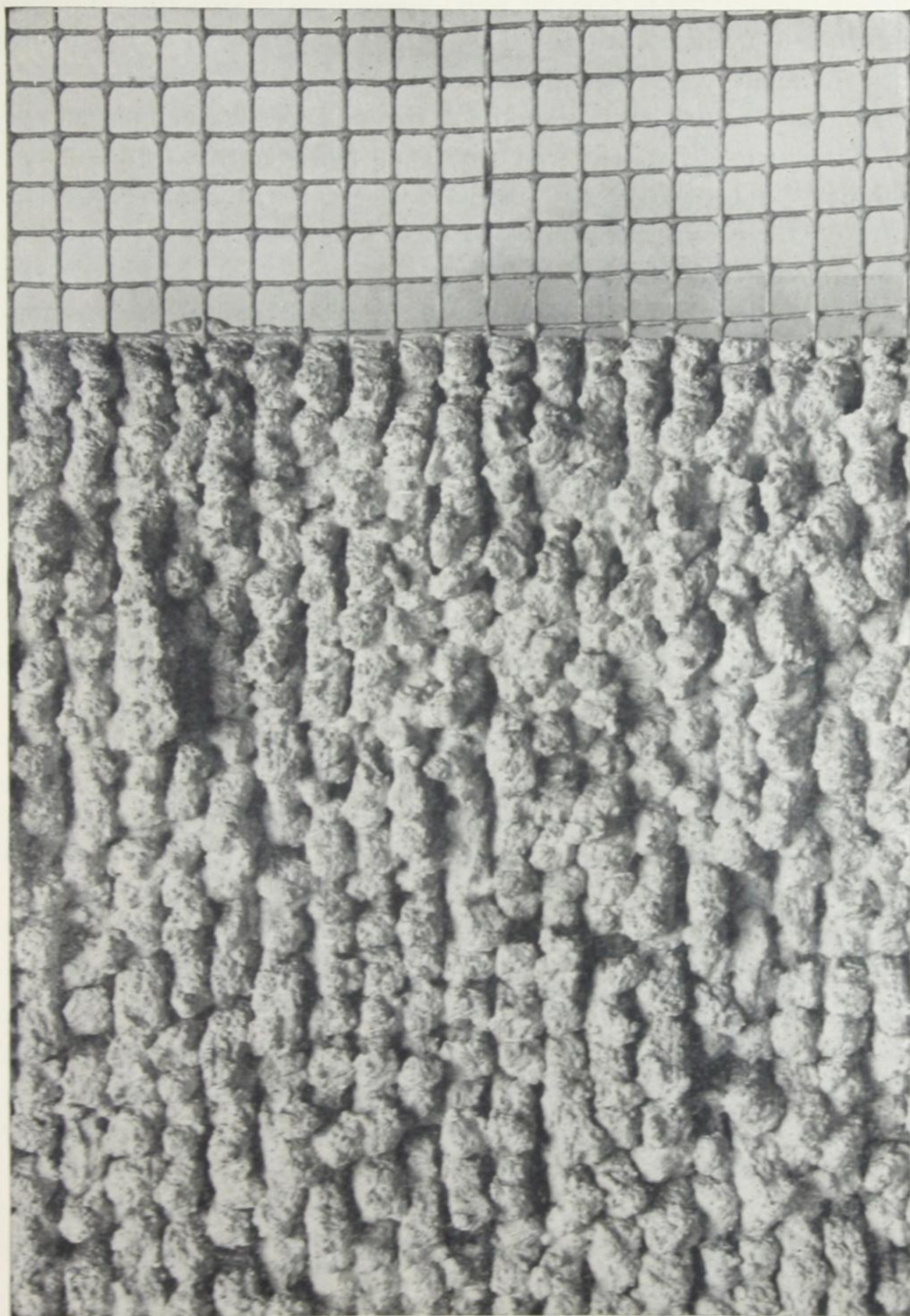
Fifth Avenue Hotel a Test of Fifty Years. The durability of Clinton Wire Lath was strikingly illustrated when the old Fifth Avenue Hotel, New York City, was torn down a few years ago. Clinton Lath, which had been in that building for fifty years, was found to be in just as good condition as when it was first made and revealed no indications of rust or deterioration of any character.

If space permitted, we could thus cite many such cases of buildings in which Clinton Lath has stood from twenty to fifty years and is to-day as strong and doing its duty just as efficiently as when first placed in the work.

In the Great Chicago Fire. As early as the great Chicago Fire of 1871, Clinton Wire Lath was proved to be an efficient fireproofing material, as demonstrated in the case of the Insurance Exchange Building. The floors of this building were supported by wooden joists which had no protection other than a covering of Clinton Wire Lath, carrying 1½ inches of cement mortar. Even this crude and primitive attempt at fireproofing was sufficient to save the building. This building stood in the very center of the line of fire in that great conflagration and was so slightly injured that it was reoccupied in seven days after the fire.

Structural Advantages

Wire vs. Sheet Metal. A drawn steel wire when compared with a sheet metal is, in the matter of strength and general quality of material, a superior product. The wire, which is made by being drawn through a die, is, during its manufacture, subjected to a high tensile stress. This drawing and working of the material renders the wire a fibrous material of uniform quality and for this reason is stronger and more reliable than sheet metal, which is necessarily of an inferior grade and which suffers more or less



Keyside of Plaster on Clinton Wire Lath

Note the perfect clinch of the mortar and the thorough manner in which the lath is embedded in the body of the plaster

injury through the process of cold cutting and expansion. A wire, in order to withstand the high tensile stress produced as it is being drawn, must, therefore, be a material, the strength and quality of which are actually tested and determined by its very process of manufacture. Clinton Wire Lath, being a woven mesh made from the best quality of drawn steel wire, possesses, therefore, a quality of material which cannot be obtained in any form of punched or expanded metal.

The Perfect Key. The primary function of any lathing material is to serve as a foundation to grip and hold mortar. It is the key or the clinch of the back plaster which actually determines the efficiency of the plastered surface. To obtain the best results, it is not sufficient to have isolated portions of mortar here and there pushed through and turned on the reverse side of the lath, as is obtained with a great many types of metal lath. In order to insure substantial and *permanent* construction, it is absolutely essential that the lath be actually embedded in the body of the plaster. Without a thorough covering of back plaster, air and moisture will in time attack the metal and a slow but sure disintegration will result. In view of the ease with which mortar will pass over and around the small circular strands of a wire mesh, with no flat or inclined surfaces to deflect or obstruct its passage, Clinton Lath enables plaster to form a more perfect key than can be obtained with any other type of lath. A glance at the key side of a wall plastered on Clinton Wire Lath will show the perfect manner in which the plaster surrounds the lath. The clinch of the back plaster is perfect; every wire is covered and it is impossible to detect a single strand, so perfectly is the mesh embedded in the plaster.

Quantity of Plaster. This perfect key does not by any means indicate that wire lath will waste plaster. All metal which enters into the structural elements of a building must be protected against rust and corrosion. In the case of a metal lath it is this back plaster, this key, this rear side covering, which must be relied upon to offer the necessary protection to the lath. The claim made by some manufacturers that their lath saves mortar is in itself an admission of the fact that a thorough and satisfactory key

is not obtained. Naturally any type of lath which permits the plaster to pass through and be turned here and there at isolated spots on the reverse side of the lath will use less plaster than one which permits the plaster to thoroughly cover the metal.

It must be remembered that this rear side of the plastered surface is inaccessible ; it cannot be reached after the front side has been plastered, and it is consequently necessary to rely upon the plaster that works through and forms the key to offer the necessary protection to the metal on the rear side of the wall. Is it economy, therefore, to take any chances with this unseen and hidden part of the construction ? If good work is desired, plaster must be used, and Clinton Wire Lath will require absolutely no more plaster than will be necessary on any other type of metal lath used in such a way as to insure good first-class and reliable construction.

Reinforced Plaster. A wall composed of wire lath and mortar is in many respects similar to the familiar slab of reinforced concrete. It is not the mortar which makes the wall, nor is it alone the lath ; without the other either one would be useless. It is the mortar which, in setting and hardening, gives the proper stiffness and rigidity to the wall, while the lath supplies the necessary foundation for the application of the mortar and the essential metallic elements for binding and reinforcing the otherwise brittle plaster, thus preventing cracks and insuring stability. As in the reinforced concrete slab, so in the wall is it necessary that the metal provide an efficient reinforcement thoroughly embedded in and bonded with the body of the plaster. By the use of wire lath the metal is actually covered by the mortar and, because of the reinforcing action of the wire when so thoroughly bonded with the plaster, walls of this construction will exhibit remarkable strength and durability. Plaster on Clinton Wire Lath is thus practically reinforced, much as a concrete floor is reinforced, and for this reason is unusually strong and will not check or crack.

Durability. The claim that Clinton Wire Lath is durable and everlasting is by no means an unsubstantiated statement. It must be remembered that our lath has been in actual use for over half a century and in that time ample opportunity has been had to

examine lath which has actually been in buildings for a great many years. We have many records of cases where Clinton Lath has been removed from buildings which have been standing from forty to fifty years, and the material when taken out has invariably proved to be in just as good condition as the day it was made. The instances of the Boston Theatre and Fifth Avenue Hotel, previously mentioned, are but two of the many which have been called to our attention. The very fact that Clinton Lath has in these various structures stood for so many years without any deterioration is proof that it is always embedded in and completely covered on all sides by the plaster. Had there been in any of these buildings the least bit of lath exposed, the action of air and moisture would have eventually started rust, and a slow but sure disintegration of the wire would have continued from year to year.

Freedom from Bulge or Sag. If a lath is not properly applied, or if it yields readily to the pressure of the plasterer's trowel, it will bulge or sag and will invariably cause cracking of the plaster. In cases where furring strips are widely separated, ordinary lath will yield readily to the pressure of the plasterer's trowel. By using V-Stiffened Clinton Lath this danger may be entirely eliminated. The V-stiffeners in Clinton Lath, extending crosswise of the fabric at intervals of 8 inches, are rigid ribs, securely attached to the fabric by metal clips. In applying the plaster the plasterer's trowel, the standard length of which is $10\frac{1}{2}$ inches, will always bear on one of these stiffening ribs. Thus it is impossible for the plasterer to push back or bulge the lath while applying the plaster.

Adaptability. Clinton Wire Lath is adapted to all kinds of plain and ornamental plastering and may be easily and accurately installed at a minimum expense. It comes to the work in compact rolls, not in cumbersome sheets. Because of the ease with which it may be worked and handled, it can be laid quickly over extensive areas and secured to the most intricate and complex furring with the greatest ease and facility.

Sizes, Types and Grades of Clinton Wire Lath

Stock Grades and Sizes

Mesh and Gage. All stock grades of Clinton Wire Lath are woven from No. 18 to No. 21 Washburn-Moen gage wire with $2\frac{1}{2}$ meshes per lineal inch in each direction. In Clinton Lath the gage of wire is always honestly and correctly tagged, thus showing the actual size of wire used. In the Clinton brand there are not 2 meshes per inch sold as $2\frac{1}{2}$, but actually $2\frac{1}{2}$ meshes to every inch of the fabric.

V-Stiffeners. In cases where special rigidity is desired or where furring strips are widely separated, Clinton Lath may be provided with V-stiffeners. These are rigid V-shaped ribs of No. 24-gage steel securely fastened to the wires and extending across the fabric at intervals of 8 inches. In addition to giving additional stiffness, these V-stiffeners also afford an off-set of $\frac{3}{8}$ inch from the supports to which the lath is attached. In Clinton Lath the V-stiffeners are attached to the wire by flat steel clips which hold them rigidly in position and prevent them from turning over or dropping out if the lath is roughly handled in transit or on the job. This important feature is lacking in other brands of lath wherein the stiffeners are merely laid in while the fabric is being woven. The V-stiffeners may frequently be utilized as furring strips, thus enabling stiffened lath to be applied directly to flat surfaces with sufficient clearance behind the wire to establish a satisfactory key for the plaster.

Japanned Lath. All sizes of Clinton Lath, either plain or stiffened, may be obtained either japanned or galvanized. The purpose of the japanning is to protect the wire against rust and corrosion. Japanning while cheaper than galvanizing affords for average interior construction a thoroughly satisfactory and efficient protective covering. If, however, it is desired to use the best that the market affords, the galvanized grade should be used.

Galvanized-After-Woven Lath. Clinton Lath, either plain or stiffened, may be obtained in the grade known as "galvanized-

after-woven." This process of galvanizing after the mesh is formed increases the rigidity of the fabric as a result of the soldering action of the galvanizing fluid at the points where the wires cross each other. In the accompanying photograph of galvanized lath the particles of spelter at points where the wires cross show clearly how the wires are thus soldered together. This maintains the integrity of the mesh and adds greatly to the rigidity of the lath. The primary object of galvanizing, however, is to provide the wire with a protective coating as this forms, of course, the most efficient and lasting protection to the metal that can be obtained. This grade of material should always be used for exterior construction where the work is subjected to severe climatic conditions.

Size of Rolls. Clinton V-Stiffened Lath, either japanned or galvanized-after-woven, is furnished in rolls 100 feet long.

Clinton Plain Lath (*i.e.*, lath without stiffeners), either japanned or galvanized-after-woven, is furnished in rolls 200 feet long.

The stock width of Clinton Lath, either plain or stiffened, is actually $36\frac{5}{8}$ inches. This width is called 36 inches and sold as such. Thus a 100-foot roll of Clinton Lath, which is sold as $33\frac{1}{3}$ square yards, actually contains about 34 square yards.

Special Grades and Sizes

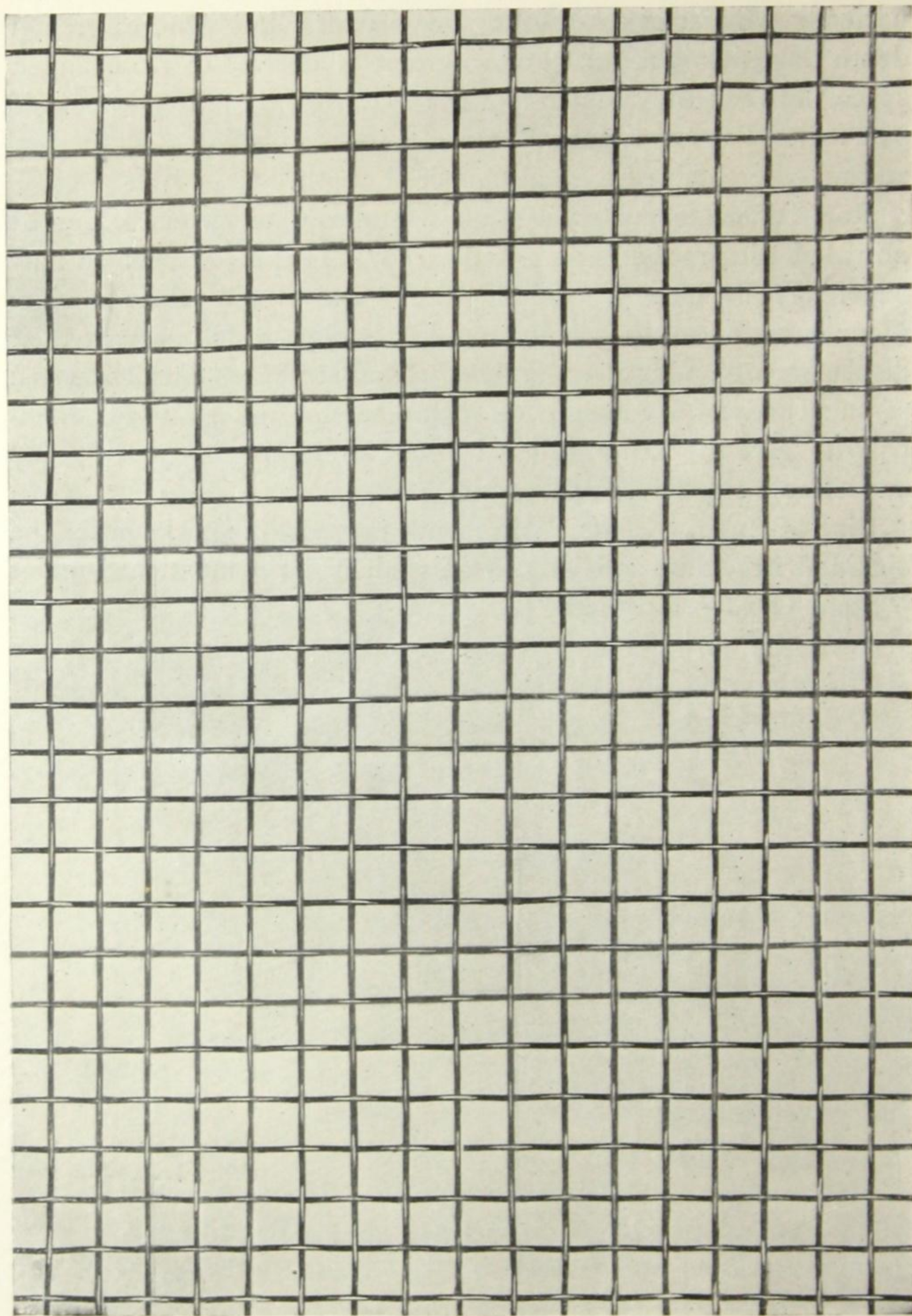
Mesh and Gage. Clinton Wire Lath may, upon special order, be obtained with various combinations of mesh and gage other than those mentioned under "Stock Grades and Sizes." A limited assortment of sizes woven with 2 meshes per inch is usually carried in stock.

V-Stiffeners. While the stock grades of Clinton Wire Lath are provided with V-stiffeners, giving an offset of $\frac{3}{8}$ inch beyond the face of the lath, V-stiffeners of other depths may be obtained by special order. Where it is desired to use lath on brick, masonry or wooden walls without the use of furring strips, the lath may be provided with stiffeners of any desired depth which may be made to serve the purpose of furring strips. In many cases, however, the standard stiffener, which is $\frac{3}{8}$ inch

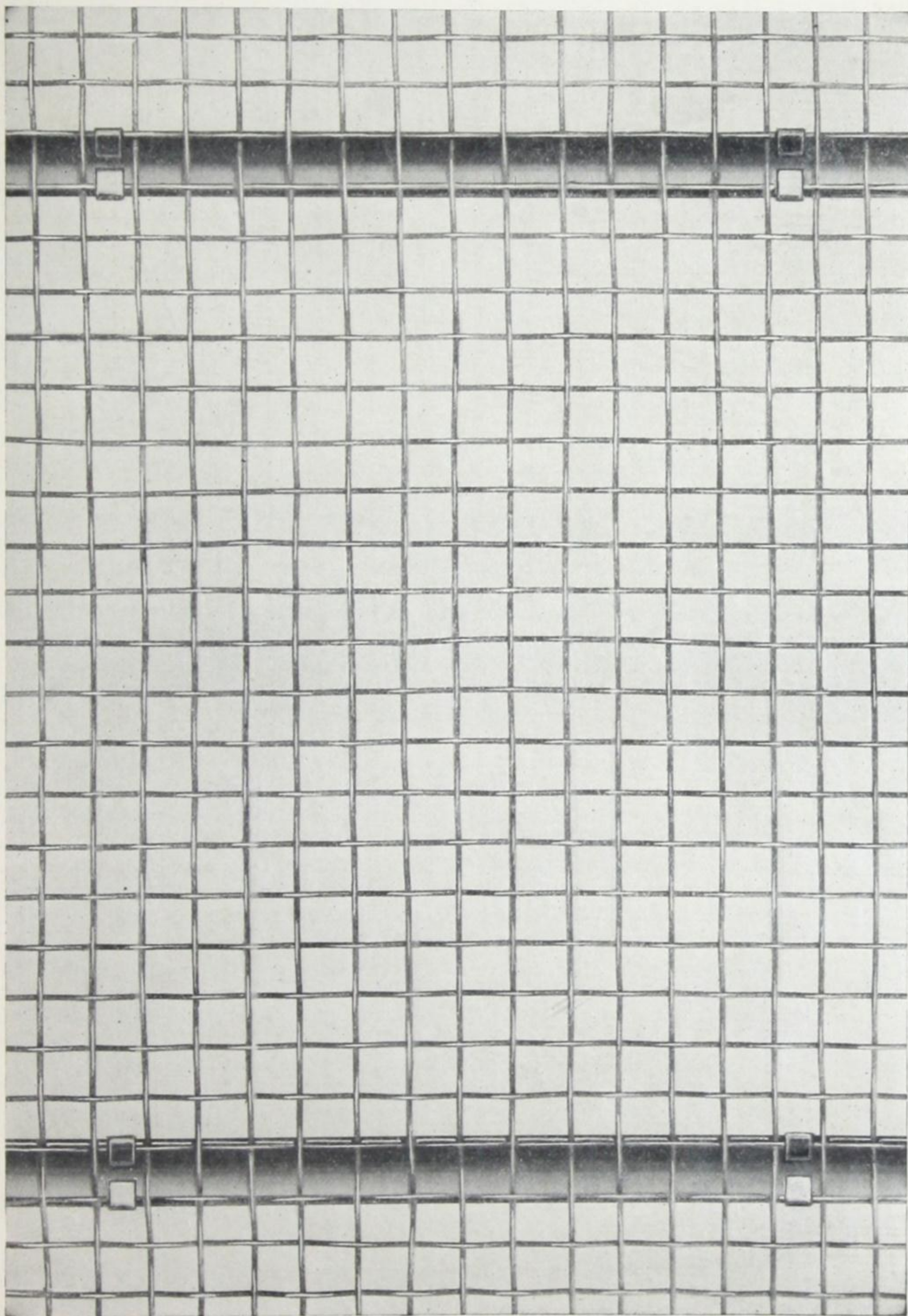
deep, will give sufficient clearance behind the lath to establish a perfectly satisfactory key for the plaster; but where greater depth than this is required or where it is desired to have an air space between the plaster and the wall, deeper stiffeners should be used. These special stiffeners are made of No. 24 gage steel and may be obtained with any desired depth.

Rod Stiffeners. Clinton Lath may also upon special order be provided with rod stiffeners if desired. These rods, which may be of any diameter or spacing, extend across the fabric and are securely bound to the lath by spiral wire clips which prevent their displacement under all conditions. Rod stiffeners usually consist of small rods of $\frac{5}{16}$ inch or $\frac{1}{4}$ inch diameter and are used principally to give the lath stiffness without attempting to provide any appreciable offset for furring purposes.

Size of Rolls. Clinton Wire Lath may, upon special order, be obtained in widths and lengths other than those mentioned under "Stock Grades and Sizes."

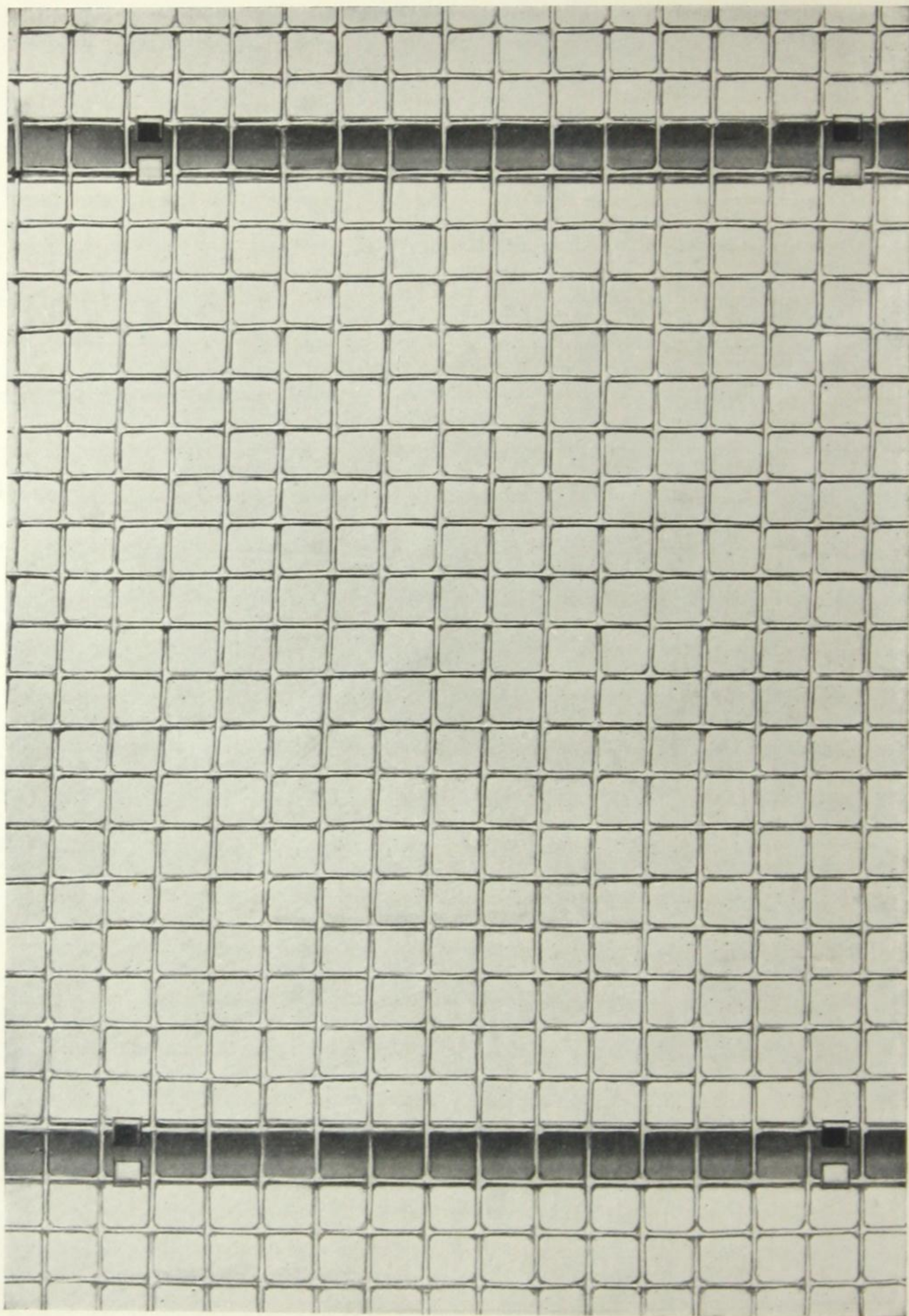


Plain Japanned Clinton Wire Lath



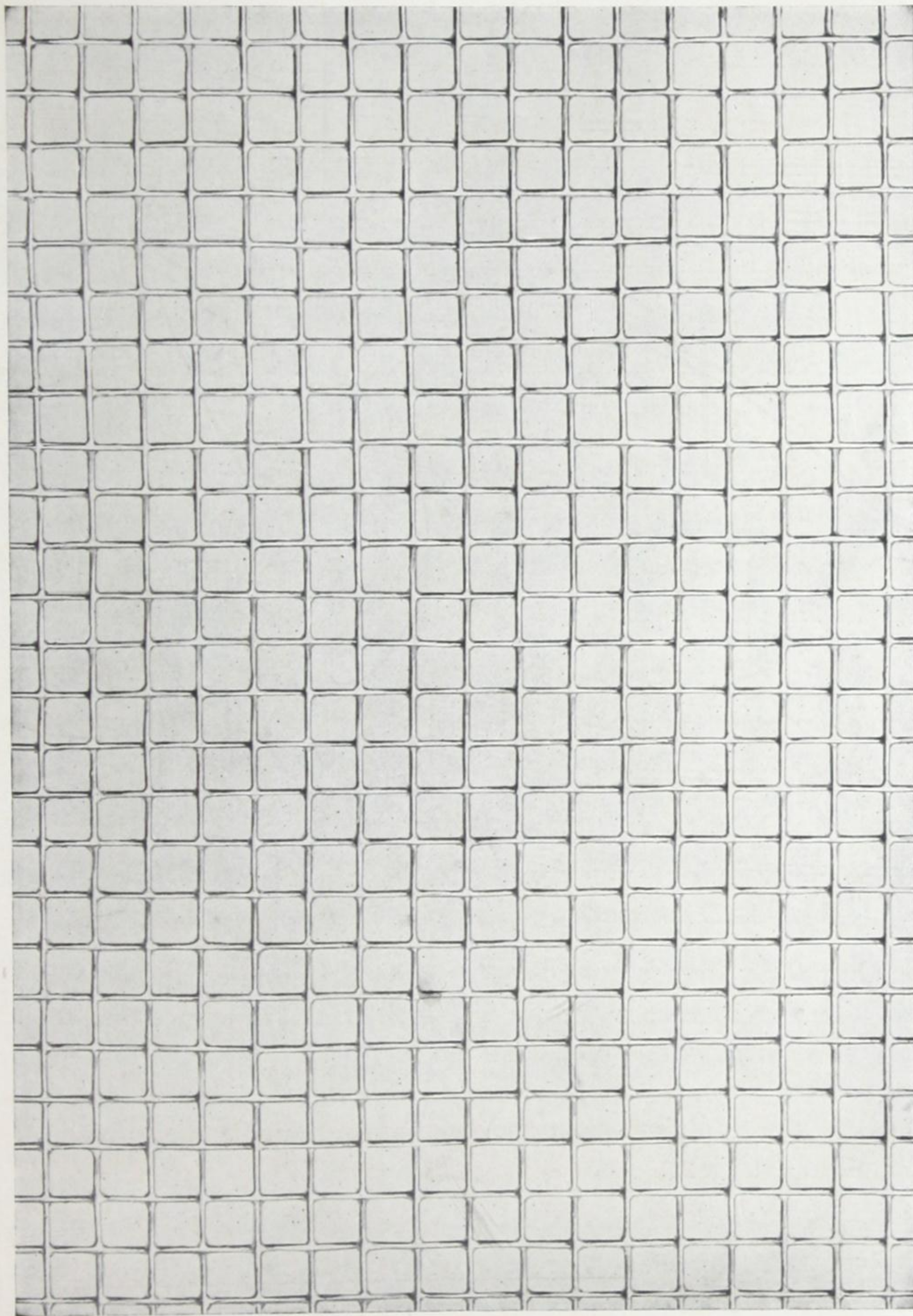
V-Stiffened Japanned Clinton Wire Lath

SUCCESSFUL STUCCO HOUSES



V-Stiffened Clinton Wire Lath, Galvanized-After-Woven

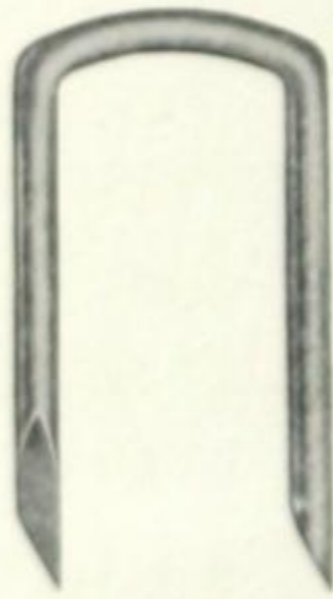
SUCCESSFUL STUCCO HOUSES



Plain Clinton Wire Lath, Galvanized-After-Woven

Clinton Staples

In applying V-Stiffened Wire Lath to wooden supports, it is advisable to secure the lath with staples which span the stiffener rather than with wire nails driven through the apex of the stiffener. For this purpose we recommend Clinton staples which are made of galvanized steel wire especially adapted for this use with points sharpened in a manner which facilitates driving them in hard wood.



1 1/4" No. 13 Square Top



3/4" No. 14 Round Top

Our wide span staples are expressly made for applying our regular V-Stiffened Lath, our 1 1/4 inch, No. 13, square top staple being of sufficient spread and length to pass over the stiffeners and afford firm anchorage when driven into the supporting woodwork. For applying plain lath we suggest our 3/4 inch, No. 14, round top staple.

How to Use and Specify Clinton Wire Lath

What to Use

Selection of the proper size of wire lath or any metal lath must necessarily be based upon a knowledge of certain sizes and grades which have been found from experience to give satisfactory results. Unlike the beams, girders, columns and other structural elements of a building the lath cannot be selected from any basis of mathematical computation and for that reason its selection involves necessarily the judgment and experience of the designer.

To meet various structural conditions and to provide considerable latitude for the designer in his selection of the lath, Clinton Wire Lath is manufactured with Nos. 18, 19, 20 and 21 Washburn-Moen gage wire and fabricated in two general types, — “plain” and “V-stiffened,” — either of which may be obtained in three grades, — “uncoated,” “japanned” and “galvanized-after-woven.” These sizes, types and grades are fully described on page 51.

As to the proper type of lath to be used in any given case, that is, whether plain or stiffened, it may be said that this usually depends upon the spacing of the furring or the supports to which the lath is attached. The object of the V-stiffening ribs, with which all stock grades of Clinton V-Stiffened Lath are provided, is to give the lath additional stiffness or rigidity, which permits the lath to satisfactorily span a wider opening than could be spanned with the plain type. In general it may be said that plain lath can be used with perfect satisfaction when the furring members are spaced 12 inches, and in some cases even 16 inches, whereas the stiffened type should always be used when the supports are more than 16 inches apart. The stiffened type may also be selected at times, not from the standpoint of stiffness, but when it is desired to use a lath which will be self-furring and in this way make use of the V-stiffening ribs to offset or fur out the lath from the surface to which it is attached.

As to the proper size of wire to be used, we would in general

recommend, for ordinary average construction with 12-inch spacing of furring, the use of a No. 19 gage wire when the lath is plain, while a No. 18 gage may be used in special ceilings or cornices which are slightly heavier than usual, or in other cases where it is desired to increase the spacing of furring to 14 or 16 inches. If, however, the lath is provided with V-stiffeners, which are in reality small, secondary furring strips on 8-inch centers, a No. 20 gage wire is sufficient. In the case of the galvanized-after-woven grade slightly smaller sizes may be used with perfect satisfaction; as, for instance, a No. 20 gage when plain and a No. 21 gage when V-stiffened. This recommendation is made because of the additional rigidity of mesh obtained by the process of galvanizing after weaving, and also in view of the superior protection which this galvanizing offers to the wire.

As to the grade of lath to be used, it is not considered good practice to use uncoated lath except in cases where the durability of the lathing material is of little consequence or where cheap, unimportant work is being executed. It is seldom necessary, however, to consider the use of the plain black wire as the difference in cost between this grade, and the japanned grade is not enough to justify the use of the former in any work of importance. Japanning offers a very satisfactory protective covering to the metal in cases where it is not permanently exposed to severe corroding agents and may be recommended as perfectly satisfactory for all average interior construction. In exterior construction, especially in stucco work, and even in interior construction when it is desired to use the best the market affords, the galvanized-after-woven grade should always be used.

How to Apply

In applying wire lath to metal furring the lath should be tied in place and drawn tight to the furring with No. 18 gage annealed galvanized wire lacing. The tie wires should be given a double turn and the raw ends bent back flush with the face of the lath. Plain lath should be wired along each furring bar at about 6-inch intervals and stiffened lath should have each stiffener securely tied to each furring bar.

SUCCESSFUL STUCCO HOUSES

All end joints should be lapped at least 1 inch and the joints in adjacent sheets should be alternated so that they will not occur in the same line. Side joints should be lapped in such a way as to insure continuity of the lathed surface and should as a rule have a lap of not less than $\frac{1}{2}$ inch. Side laps should preferably be made along a furring bar or support, but if made between furring they should be thoroughly laced together.

In applying wire lath to wooden supports, either against sheathing or to bare studs in walls and partitions, or against joists as in ceilings, the lath should be securely stapled in place with galvanized wire staples, which should be driven down so as to bring the lath to a secure bearing against the supporting background. In applying plain lath to wooden furring, it should be stapled along each furring strip at intervals of about 6 inches, while stiffened lath should have each stiffener stapled to each stud or joist. In case stiffened lath is applied directly to sheathing, each stiffener should be stapled both at the sides and at the center of the sheet.

In the following table are given quantities of wire lacing or wire staples required to apply 100 square yards of Clinton Wire Lath with various spacings of furring. In this table it is assumed that plain lath is wired or stapled to each furring strip at 6-inch intervals along its length, while stiffened lath is wired or stapled to each furring strip at 8-inch intervals along its length. The wire lacing for connection to metal furring is in each case No. 18 annealed galvanized wire and the staples are Clinton Galvanized Wire Staples, — $\frac{3}{4}$ inch No. 14 round top for plain lath and $1\frac{1}{4}$ inches No. 13 square top for stiffened lath.

Wire Lacing and Wire Staples Required to Apply 100 Square Yards of Clinton Wire Lath

Spacing of Furring	Plain Lath		V-Stiffened Lath	
	No. 18 Galvanized Wire Lacing	$\frac{3}{4}$ " No. 14 Galvanized Wire Staples	No. 18 Galvanized Wire Lacing	$1\frac{1}{4}$ " No. 13 Galvan. Wire Staples
12" c/c	6 lbs.	4 lbs.	5½ lbs.	9½ lbs.
14" c/c	5 lbs.	3½ lbs.	4½ lbs.	8 lbs.
16" c/c	4½ lbs.	3 lbs.	4 lbs.	7 lbs.
18" c/c	-----	-----	3½ lbs.	6 lbs.

How to Specify

In specifying wire lath it is essential to describe carefully the various necessary features of the lath in order to obtain the exact type and grade of material desired. The specification should always include the word "Clinton" in order to make sure of obtaining the standard recognized Clinton quality. The different types and grades of Clinton Wire Lath should each be specified as follows :

- No. ---- gage Japanned Clinton Wire Lath.
- No. ---- gage Clinton Wire Lath Galvanized-after-woven.
- No. ---- gage V-Stiffened Japanned Clinton Wire Lath.
- No. ---- gage V-Stiffened Clinton Wire Lath Galvanized-after-woven.

Unless otherwise specified, all Clinton Lath will be $36\frac{5}{8}$ inches wide and woven with $2\frac{1}{2}$ meshes per lineal inch. Other widths and meshes, however, may be obtained by special order.

How to Order

In ordering Clinton Wire Lath it is essential to give complete description of the size, type and grade of lath and also the quantity desired. The quantity may be ordered in square yards or in rolls thus :

- Ship $666\frac{2}{3}$ square yards of No. ---- gage Clinton Wire Lath Galvanized-after-woven.
- Ship 10 rolls of No. ---- gage Clinton Wire Lath Galvanized-after-woven.

Unless otherwise specifically mentioned, plain lath will be shipped in rolls containing 200 lineal feet, while stiffened lath will be shipped in rolls containing 100 lineal feet. The stock width of $36\frac{5}{8}$ inches is sold as 36 inches.

Shipping Weights of Clinton Wire Lath

Gage of Wire	Weight of One Roll of Plain Lath Containing 200 Lineal Feet, 36" Wide		Weight of One Roll of V-Stiffened Lath Containing 100 Lineal Feet, 36" Wide	
	Japanned	Galvanized	Japanned	Galvanized
No. 18	215 lbs.	270 lbs.	135 lbs.	175 lbs.
No. 19	165 lbs.	210 lbs.	110 lbs.	145 lbs.
No. 20	120 lbs.	165 lbs.	90 lbs.	125 lbs.
No. 21	100 lbs.	140 lbs.	80 lbs.	110 lbs.

Successful Stucco Houses

ON the following pages we illustrate a few of the many excellent architectural examples recently erected, in the construction of which Clinton Wire Lath was specified and used. Prominent architects throughout the country are specifying Clinton Wire Lath, with that satisfaction peculiar to the use of a material guaranteed by years of success and the surety of unvarying excellence in future manufacture.

SUCCESSFUL STUCCO HOUSES



A House at West Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used



A Garage to House at West Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

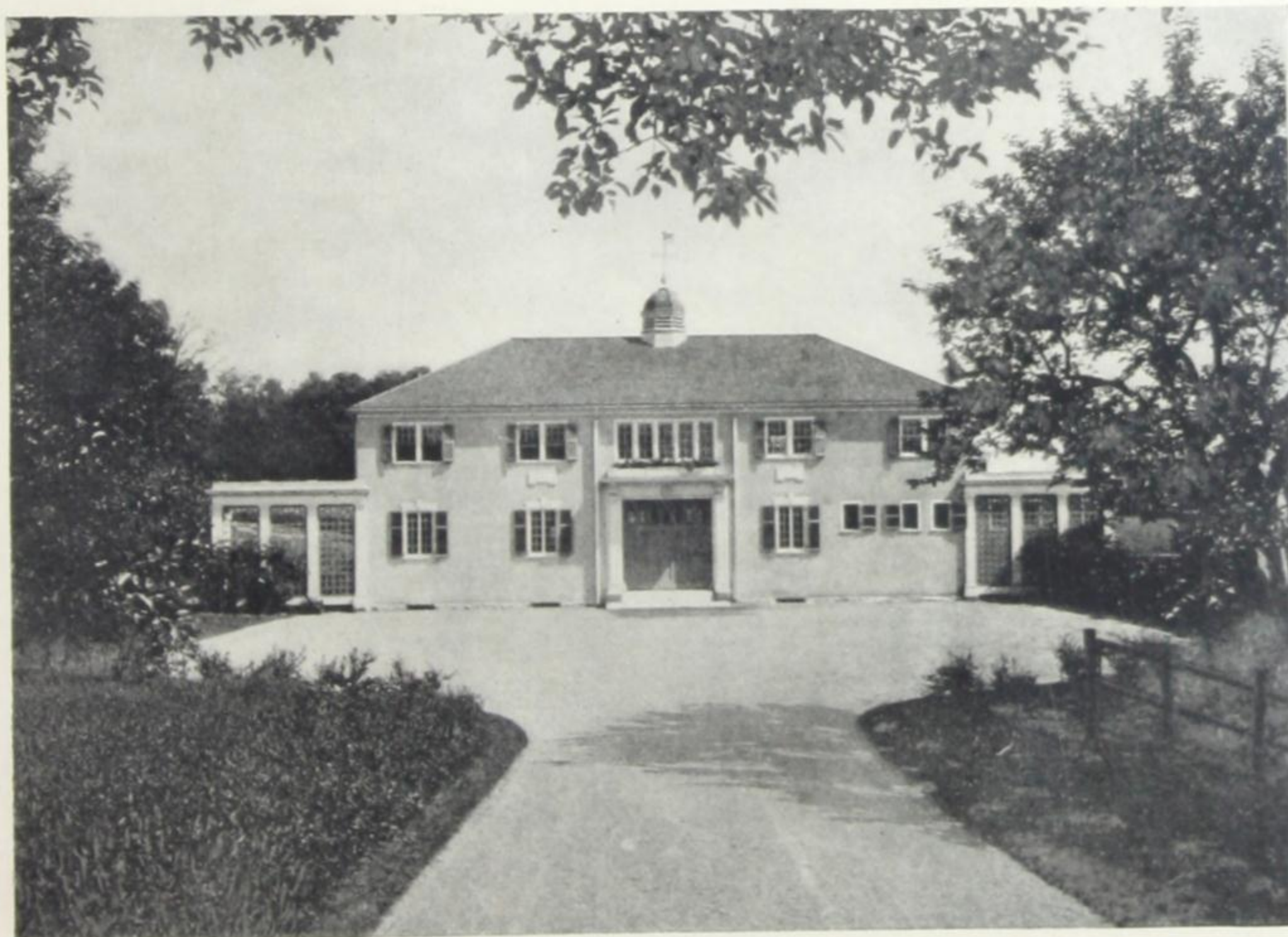
SUCCESSFUL STUCCO HOUSES



A House at Lancaster, Mass.

Bigelow & Wadsworth, *Architects*

Clinton Wire Lath used



A Stable at Lancaster, Mass.

Bigelow & Wadsworth, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Chestnut Hill, Mass.

Chapman & Frazer, Architects

Clinton Wire Lath used



Entrance to Stable Courtyard at Chestnut Hill, Mass.

Chapman & Frazer, Architects

Clinton Wire Lath used

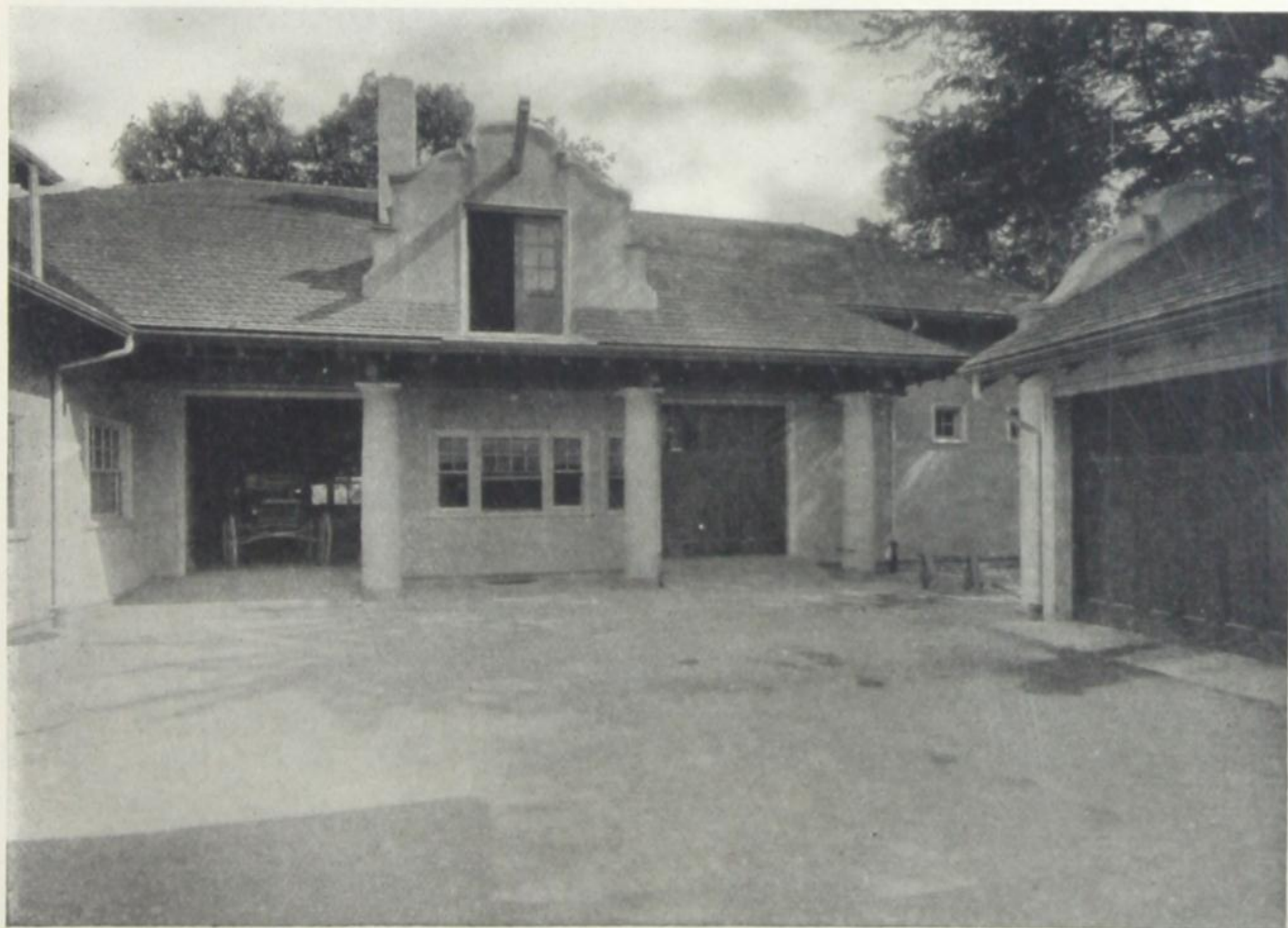
SUCCESSFUL STUCCO HOUSES



Entrance to Estate at Chestnut Hill, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used



A Stable and Garage at Chestnut Hill, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at West Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

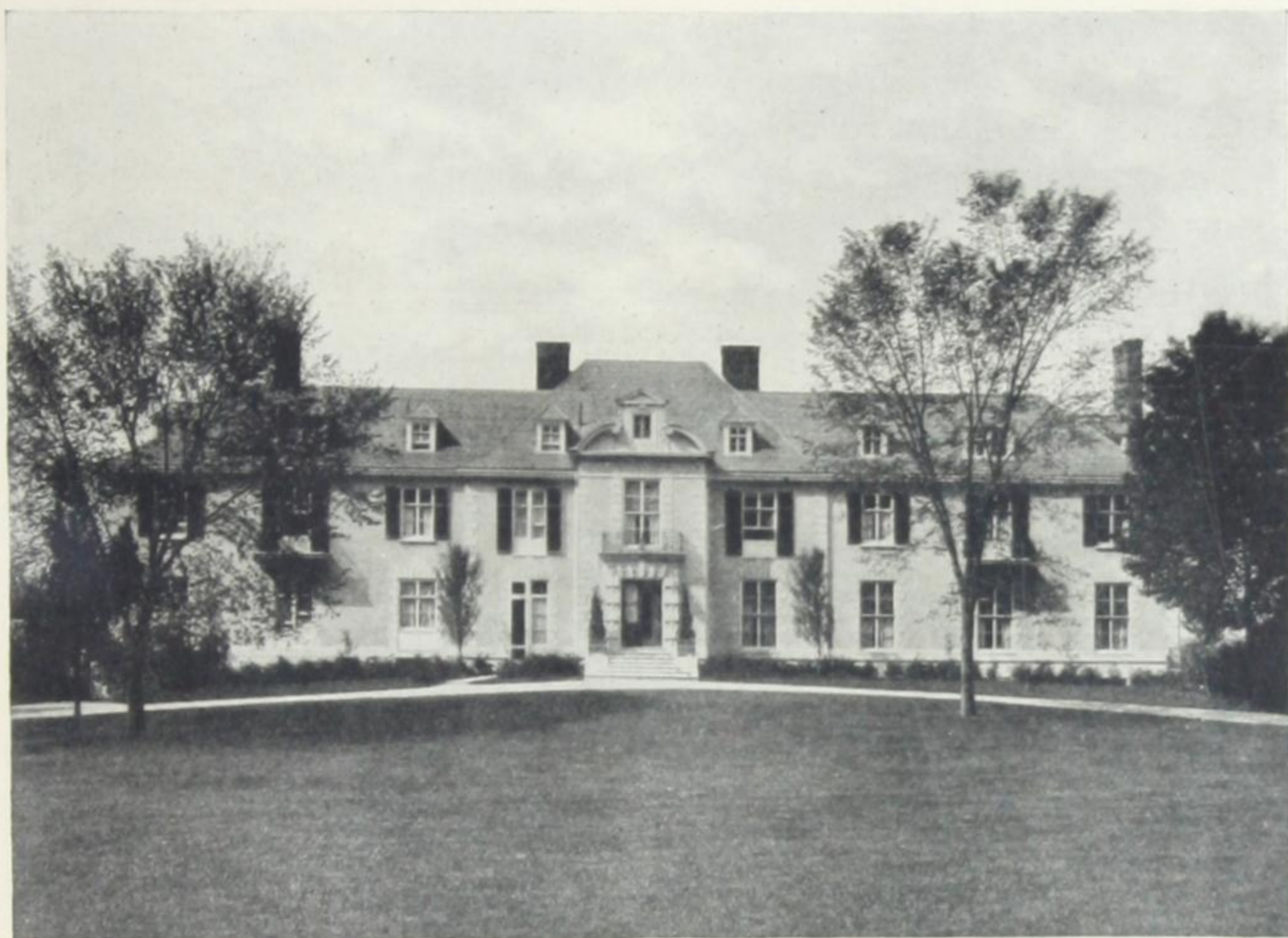


A House at Brookline, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Milton, Mass.

Bigelow & Wadsworth, *Architects*

Clinton Wire Lath used



A House at Glen Cove, L. I.

Charles A. Platt, *Architect*

Clinton Wire Lath used

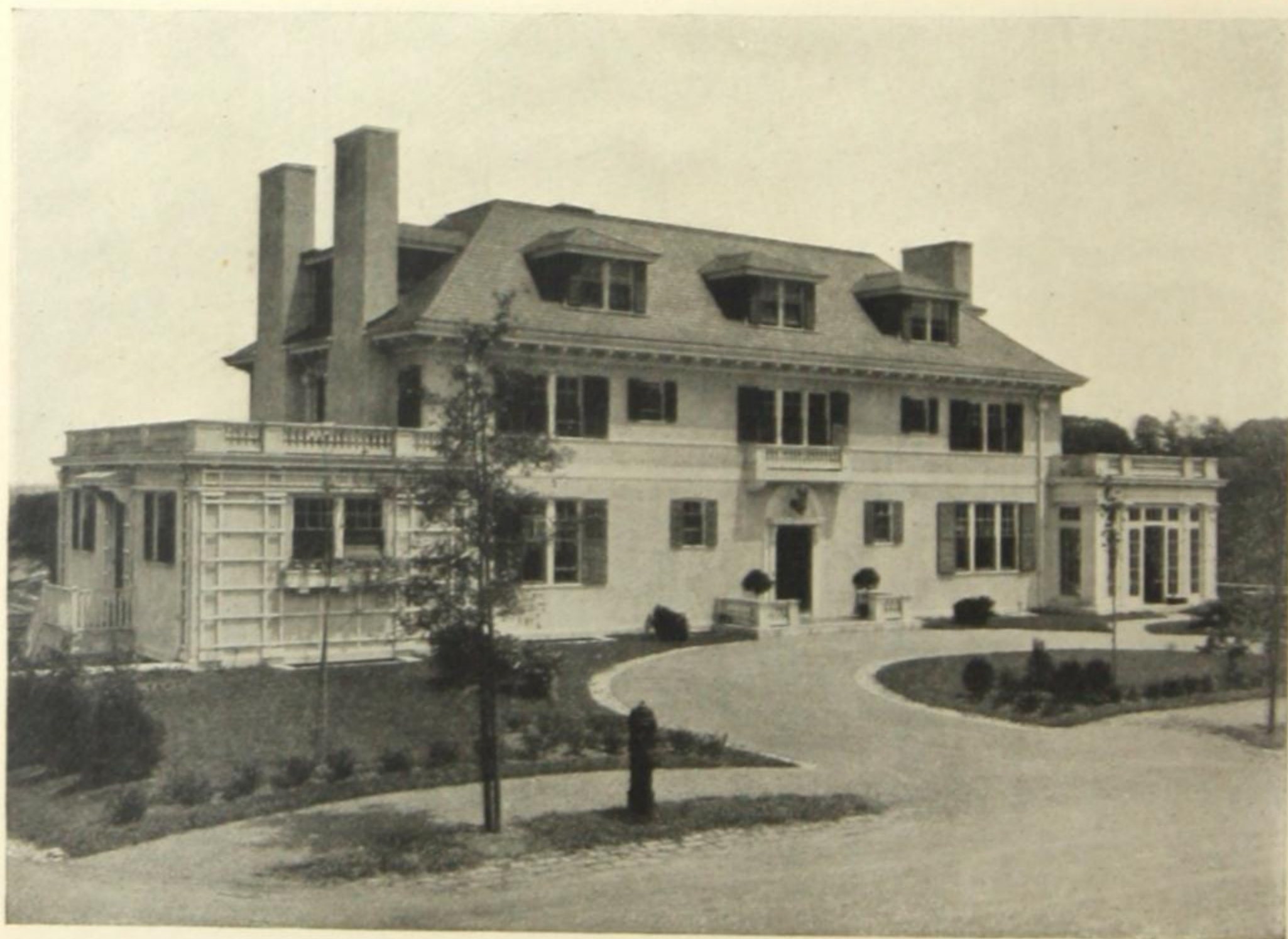
SUCCESSFUL STUCCO HOUSES



A House at Magnolia, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used



A House at Chestnut Hill, Mass.

James Purdon, *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Rockville, Conn.

Charles A. Platt, *Architect*

Clinton Wire Lath used



A House at Marion, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used



A House at Brookline, Mass.

Benjamin Proctor, Jr., *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at New Orleans, La.

R. Spencer Soule, *Architect*

Clinton Wire Lath used



A House at Glen Falls, N. Y.

Bigelow & Wadsworth, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Canton, Mass.

Bigelow & Wadsworth, *Architects*

Clinton Wire Lath used



A House at Brookline, Mass.

Benjamin Proctor, Jr., *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Southboro, Mass.

James Purdon, *Architect*

Clinton Wire Lath used



A House at Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



R. Spencer Soule, *Architect*

A House at New Orleans, La.

Clinton Wire Lath used



Chapman & Frazer, *Architects*

A House at Hyannisport, Mass.

Clinton Wire Lath used

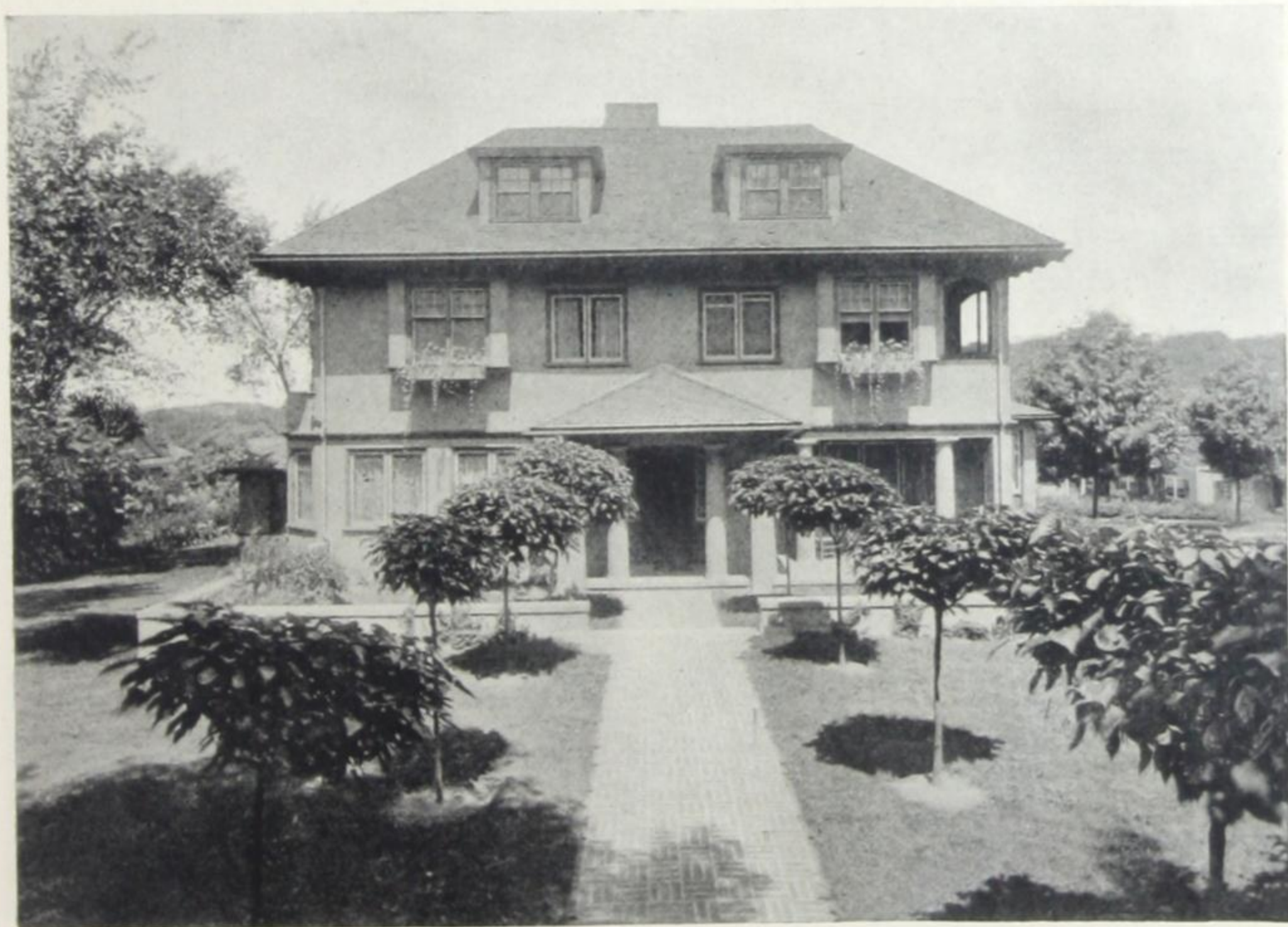
SUCCESSFUL STUCCO HOUSES



A House at Winchester, Mass.

Thomas James, *Architect*

Clinton Wire Lath used



A House at Brookline, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Brookline, Mass.

Chapman & Frazer, Architects

Clinton Wire Lath used



A House at Newton, Mass.

Chapman & Frazer, Architects

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Brookline, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used



A House at New Orleans, La.

R. Spencer Soule, *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Brookline, Mass.

Bigelow & Wadsworth, *Architects*

Clinton Wire Lath used

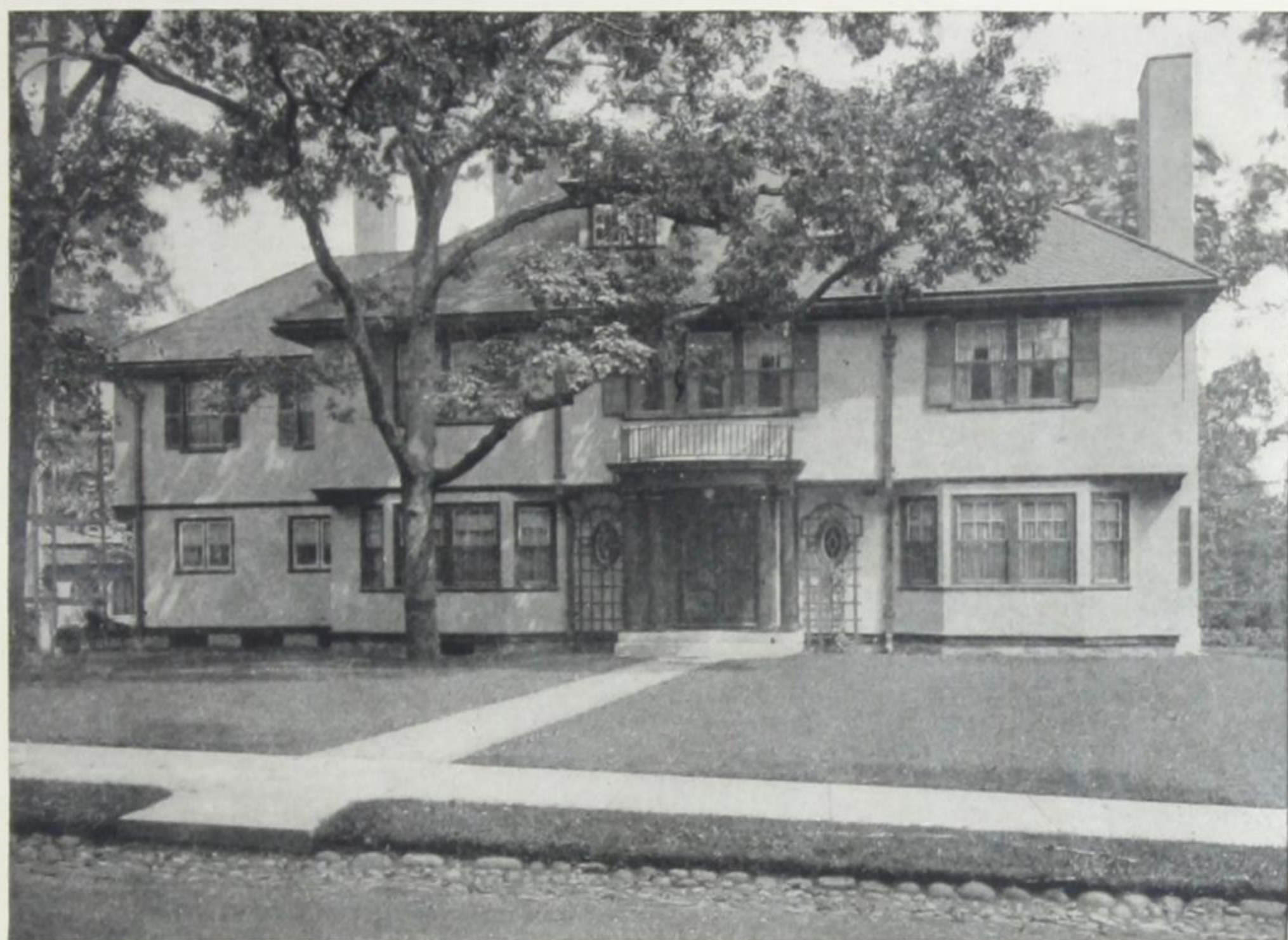


A House at Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Brookline, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used



A House at Manchester, Mass.

James Purdon, *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Jamaica Plain, Mass.

James Purdon, *Architect*

Clinton Wire Lath used



A House at Jamaica Plain, Mass.

Benjamin Proctor, Jr., *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Brookline, Mass.

Benjamin Proctor, Jr., *Architect*

Clinton Wire Lath used



A House at West Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

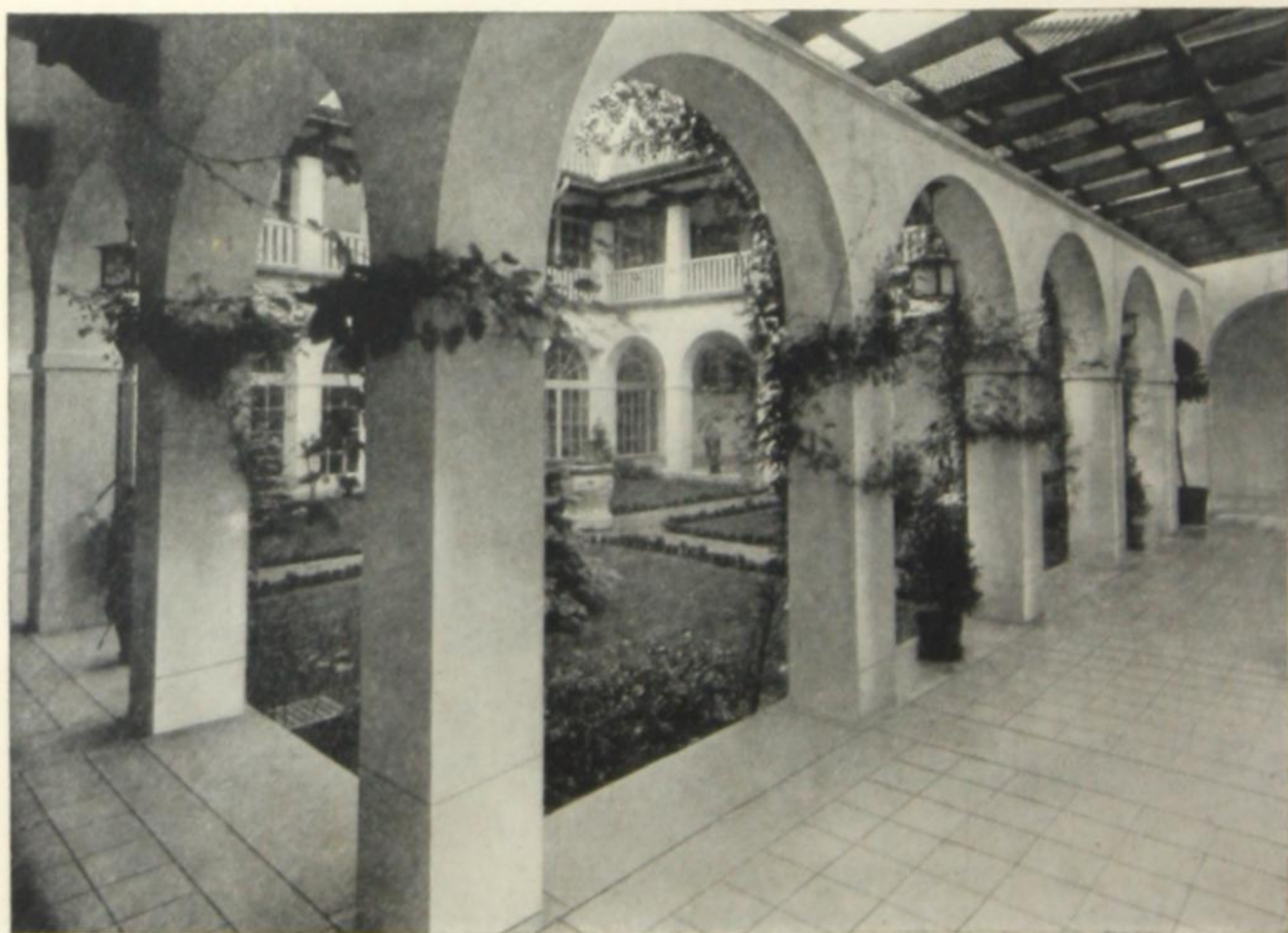
SUCCESSFUL STUCCO HOUSES



A House at Augusta, Me.

Thomas James, *Architect*

Clinton Wire Lath used



A Patio in House at Marion, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at New Orleans, La.

R. Spencer Soule, *Architect*

Clinton Wire Lath used



A House and Garage at Falmouth Heights, Mass.

James Purdon, *Architect*

Clinton Wire Lath used

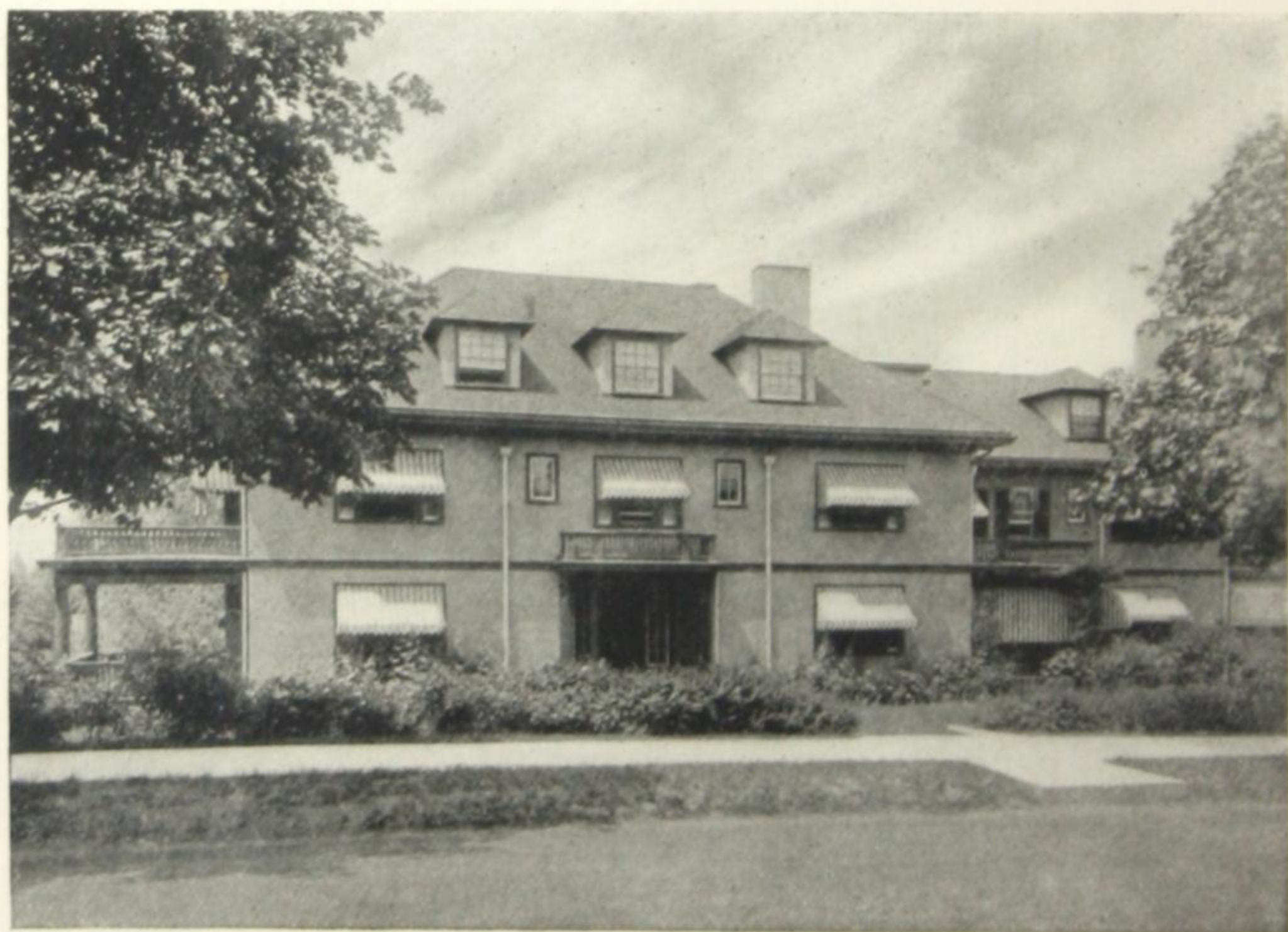
SUCCESSFUL STUCCO HOUSES



A House at Winchester, Mass.

Thomas James, *Architect*

Clinton Wire Lath used



A House at Brookline, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used



A House at Brookline, Mass.

Benjamin Proctor, Jr., *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Augusta, Me.

Thomas James, *Architect*

Clinton Wire Lath used



A House at Hopedale, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Worcester, Mass.

James Purdon, *Architect*

Clinton Wire Lath used



A House at Brookline, Mass.

Benjamin Proctor, Jr., *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Leominster, Mass.

James Purdon, *Architect*

Clinton Wire Lath used



A House at West Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Brookline, Mass.

Benjamin Proctor, Jr., *Architect*

Clinton Wire Lath used

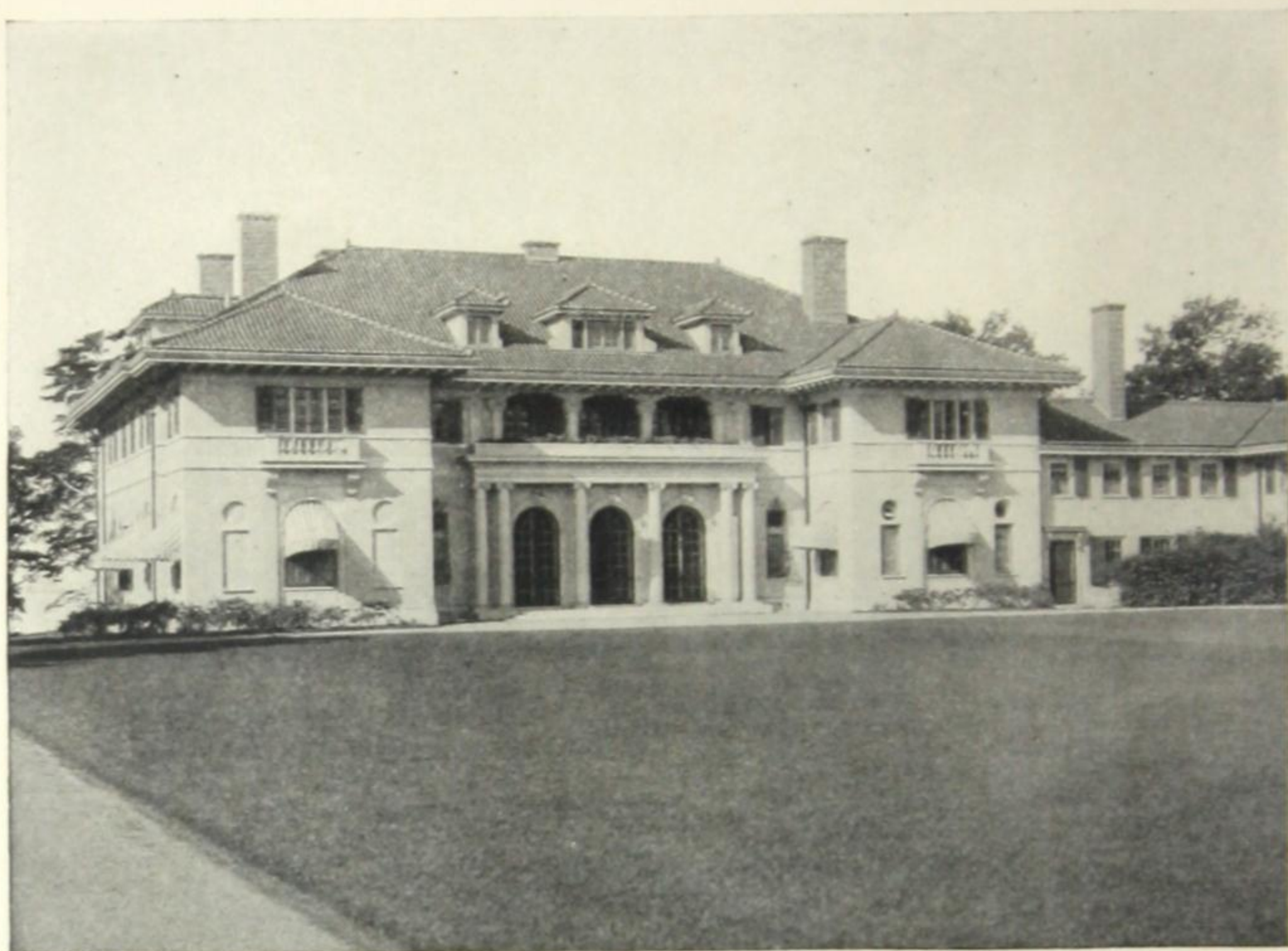


A House at Chestnut Hill, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Beverly, Mass.

Guy Lowell, *Architect*

Clinton Wire Lath used



A House at Brookline, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at West Newton, Mass.

Chapman & Frazer, *Architects*

Clinton Wire Lath used



A Reading Room at York Harbor, Me.

James Purdon, *Architect*

Clinton Wire Lath used

SUCCESSFUL STUCCO HOUSES



A House at Brookline, Mass.

Benjamin Proctor, Jr., *Architect*

Clinton Wire Lath used



A House at Bar Harbor, Me.

Chapman & Frazer, *Architects*

Clinton Wire Lath used

